
FOLIO

Special Issue

Sponsored Research
at the
University of Alberta
1986-1987



University of Alberta
Edmonton, Canada

This special edition of *Folio* has been prepared
at the request of the Vice-President (Research).
Information was compiled by the Office of Research Services
in consultation with the departments and units on campus.

March 1989

Sponsored Research at the University of Alberta 1986/87

Introduction

This special edition of Folio provides a mechanism for the University of Alberta to gratefully acknowledge the role of those external organizations who have supported research programs during the 1986/87 fiscal year. The report also presents an overall statement on sponsored research at the University of Alberta, and provides an opportunity for researchers to locate other researchers and sponsoring agencies in their areas of expertise.

The listings identify selected awards totalling \$41,763,412. Total sponsored research revenue¹ in 1986/87 was \$57,478,000.

Sponsored Research

Sponsored research includes grants, contracts, and related types of external funding. Specific awards included in this report represent contracts, plus conference, equipment, technology transfer, infrastructure, and operating research grants. Financial support provided as the result of general and development funding to the University (e.g. internal endowment transfers) is outside the scope of this report, as is sponsored research conducted by incorporated centres of research associated with the University (e.g. the Alberta Microelectronic Centre), and other affiliated institutions (e.g. the Cross Cancer Institute). All other categories and awards that were administered through organizations other than the Office of Research Services, University of Alberta (e.g. private consulting arrangements), are also outside the scope of this report, as is funding distributed via internal University of Alberta committees (e.g. the Central Research Fund).

Listings

This report identifies principal researchers, research projects and research sponsors, and notes the amount of each award. On-campus co-investigators are also identified; however, a dollar value for each award is assigned only once in the report and appears with the listing of the investigator whose name occurs first on the original application.

Format

The report is organized as follows:

- 1) Listings of Faculties, Departments, and units (page 5).
- 2) Explanation of agency codes (page 6,7).
- 3) Agency codes listed by category (pages 7,8).

- 4) Explanation of award codes (page 8).
- 5) Sponsored research listings (pages 9-68).
- 6) Index of researchers (pages 69-71).

Note: The name of the Faculty, Department, or unit that was used in 1986/87 is the name used here (e.g. the Developmental Disabilities Centre is listed as the Centre for the Study of Mental Retardation).

Dimensions of Research

Sponsored research funding is only one measure of research effort. As a result, this report is not intended, nor should it be interpreted as, representing the entire research effort at the University of Alberta. Indeed, many disciplines are continuing to achieve positive results without external sponsorship, including published articles, books and monographs, exhibitions, patents, consultations and related activities.

Additional Sources of Research Information

Other information sources help present a more comprehensive research picture of campus-wide research activity. The University of Alberta Research Expertise Database lists the research interests and major expertise of over 1200 University staff. It is multi-disciplinary in scope, and provides an effective way to identify and locate University staff having specific knowledge or expertise in a given area. The Research Expertise Database is available to anyone with access to the campus' MTS computing system.

Faculties, Institutes or research groups produce publications of their own, often presenting more technical descriptions of their research efforts. Examples of such publications are the Faculty of Arts *Report on Research and Creative Work*, and the Faculty of Medicine *From Laboratory to Marketplace* (Biotechnology Initiatives). Among others, the Faculties of Science, Engineering, and Agriculture and Forestry also produce inventories.

Individual Departments may produce graduate calendars which are other sources of information concerning research activities. The Faculty of Graduate Studies and Research produces *A Profile* which also provides a general overview of the type of research conducted at the University of Alberta.

¹ Schedule 4, University of Alberta Financial Statements

Office of Research Services

The Office of Research Services (ORS) was established in 1982 as a reorganization of the former Research Grants and Contracts Office, and is under the direction of the Vice-President (Research). The scope of ORS functions can be divided into two areas: sponsored research and technology transfer.

In sponsored research, ORS provides the infrastructure for processing research grants (both internal through the Central Research Fund and the AHFMR Internal Allocations Committee, and external through off-campus sponsoring agencies) and contracts at the University of Alberta. In technology transfer, ORS provides support through Technology Development Officers, who assist in the transfer of University developed technologies to outside parties. ORS also maintains and updates the University of Alberta Research Expertise Database.

University of Alberta

The University of Alberta, Canada's second largest university², is committed to the pursuit of excellence in education and research. Programs are diversified and broadly based across 18 Faculties and 88 departments. With over 1,700 faculty members having backgrounds from various parts of the world and 24,000 students from over 100 countries, the University of Alberta is appropriately referred to as an international centre in terms of its people and its outlook.

For more information on University of Alberta sponsored research, please contact:

Office of Research Services
University of Alberta
1-3 University Hall
Edmonton, Alberta, Canada
T6G 2J9

Phone: (403) 492-5360

Selected Sponsored Research

This summary of the total amount of research awarded to individuals and directly to the University highlights the level of support provided by major agencies. The largest support to research comes from provincial and federal agencies. There is, however, a wide diversity of funding sources. A listing of all sources and their respective award codes is provided on pages 6,7, and 8.

Research Grants and Contracts from Selected Sources to Individuals and Block Grants Administered by Faculties

Agency	Amount
AHFMR ³	\$ 3,899,164
MRC	\$ 6,560,188
NSERC	\$ 15,507,274
SSHRC	\$ 542,151
Other Provincial	\$ 7,584,562
Other Federal	\$ 2,640,825
Other Agencies	\$ 5,029,248
Total	\$ 41,763,412

External Funding Awarded to the University for Distribution through the Central Research Fund⁴

Agency	Amount
AHFMR	\$ 372,800
NSERC	\$ 424,800
SSHRC	\$ 94,038
Total	\$ 891,638

² in terms of enrollment

³ The AHFMR support is partial in this report and excludes scholarship, stipend and studentship awards. AHFMR level of support including these categories was \$13,191,000.

⁴ Annual Reports for the Central Research Fund are available from either Department Chairs' Offices or the Office of Research Services.

Faculties, Departments, Units

Faculty of Agriculture and Forestry	9	Faculty of Medicine	34
Department of Agricultural Engineering	9	Department of Anatomy	35
Department of Animal Science	10	Department of Applied Sciences in Medicine	35
Department of Entomology	11	Department of Biochemistry	35
Department of Food Science	12	Cross Cancer Institute	37
Department of Forest Science	13	Group Lipid and Lipoprotein	37
Department of Plant Science	14	Group NMR	37
Department of Rural Economy	15	Department of Health Services Administration and Community Medicine	38
Department of Soil Science	16	Department of Immunology	38
Faculty of Arts	17	J S McEachern Laboratory	39
Department of Anthropology	17	Department of Medical Microbiology and Infectious Diseases ..	39
Department of Classics	18	Department of Medicine and Clinical Medicine	40
Department of Comparative Literature	18	Department of Obstetrics and Gynaecology	41
Department of Economics	18	Department of Paediatrics	42
Department of English	18	Department of Pathology	42
Department of History	19	Department of Pharmacology	43
Department of Philosophy	19	Department of Physiology	43
Department of Political Science	19	Department of Psychiatry	44
Department of Psychology	19	Department of Surgery and Clinical Surgery	45
Department of Sociology	20	Faculty of Nursing	46
Faculty of Business	21	Faculty of Pharmacy and Pharmaceutical Sciences ..	47
Department of Finance and Management Science	21	Faculty of Physical Education and Recreation	48
Department of Marketing and Economic Analysis	21	Department of Physical Education and Sport Studies	48
Department of Organizational Analysis	21	Faculty of Rehabilitation Medicine	49
Faculty of Dentistry	22	Department of Occupational Therapy	49
Department of Oral Biology	22	Department of Physical Therapy	49
Department of Restorative Dentistry	22	Department of Speech Pathology and Audiology	50
Department of Stomatology	22	Faculty of Science	50
Faculty of Education	23	Department of Botany	50
Department of Educational Administration	23	Department of Chemistry	51
Department of Educational Foundations	23	Department of Computing Science	54
Department of Educational Psychology	23	Department of Genetics	55
Educational Research Services	23	Department of Geography	55
Department of Elementary Education	23	Department of Geology	56
Department of Industrial and Vocational Education	24	Department of Linguistics	57
Department of Secondary Education	24	Department of Mathematics	57
Faculty of Engineering	24	Department of Microbiology	59
Department of Chemical Engineering	24	Department of Physics	60
Department of Civil Engineering	25	Department of Psychology	63
Department of Electrical Engineering	28	Department of Statistics and Applied Probability	63
Department of Mechanical Engineering	30	Department of Zoology	64
Department of Mining, Metallurgical and Petroleum Engineering	31	VP Academic	66
Faculty of Extension	32	Library System	66
Faculty of Home Economics	32	University of Alberta Archives	66
Department of Clothing and Textiles	32	VP Research	66
Department of Family Studies	33	Interdisciplinary Research Units	67
Department of Foods and Nutrition	33	Boreal Institute for Northern Studies	67
Faculty of Law	33	Canadian Institute of Ukrainian Studies	67
Faculty of Library Science	34	Center for the Study of Mental Retardation	67
		Devonian Botanic Garden	67

Agencies

AAEM	Alberta Advanced Education	CIIPS	Canadian Institute For International Peace And Security
AARN	Alberta Association Of Registered Nurses	CIL	C-I-L Incorporated
AART	Alberta Agricultural Research Trust	COM	Cominco
ABA	Alberta Beekeepers Association	CPSYA	Canadian Psychological Association
AC	Alberta Culture And Multiculturalism	CRIAW	Canadian Research Institute For The Advancement Of Women
ACB	Alberta Cancer Board	CYAN	Cyanamid
ACOH	Alberta Community And Occupational Health	DINA	Department Of Indian And Northern Affairs
ACS	American Chemical Society	DN	Dene Nation
ADA	Alberta Department Of Agriculture	DND	Department Of National Defence
AE	Alberta Environment	DRIE	Department Of Regional Industrial Expansion
AECC	Alberta Educational Communications Corporation	DUP	Du Pont Canada Incorporated
AECL	Atomic Energy Of Canada	EBH	Edmonton Board Of Health
AED	Alberta Education	EC	Environment Canada
AENR	Alberta Energy	EGH	Edmonton General Hospital
AERT	Alberta Environmental Research Trust	EIC	Employment And Immigration Commission
AF	Alberta Department Of Forestry	EMRC	Energy, Mines And Resources Canada
AFDRT	Alberta Forest Development Research Trust	FAS	Fitness And Amateur Sport
AFL	Alberta Federation Of Labour	FOC	Fisheries And Oceans Canada
AFLA	Alberta Foundation For The Literary Arts	GNWT	Government Of The Northwest Territories
AFNR	Alberta Foundation For Nursing Research	HEINZ	Heinz Company Of Canada
AFP	Alberta Food Products	HRUD	Hrudey, Steve E And Associates Limited
AGCA	Agriculture Canada	HWC	Health And Welfare Canada
AGT	Alberta Government Telephones	IDRC	International Development Research Center
AHFMR	Alberta Heritage Foundation For Medical Research	IMC	International Minerals Corporation
AHPW	Alberta Housing And Public Works	IOL	Imperial Oil Limited
ALED	Alberta Economic Development	KFC	Kidney Foundation Of Canada
ALF	Alberta Law Foundation	KSC	Kellogg Salada Canada Incorporated
AMHAC	Alberta Mental Health Advisory Council	LGL	L G L Limited
AMOCO	Amoco Canada Petroleum Company Limited	LSC	Landis Seed Canada Limited
AMUSA	Alberta Museums Association	LTI	Liposome Technology Incorporated
ANAQ	Anaquest	MDA	Muscular Dystrophy Association Of Canada
AOSTR	Alberta Oil Sands Technology And Research Authority	MDBDF	March Of Dimes Birth Defects Foundation
APA	Alberta Pharmaceutical Association	MISC	Miscellaneous Private Donations
APPM	Alberta Pork Producers Marketing Board	MRC	Medical Research Council
ARC	Alberta Research Council	MRW	Morris Rod Weeder Company Limited
ARCA	Agriculture Research Council Of Alberta	MSI	MSI Foundation
ARP	Alberta Recreation And Parks	NATO	North Atlantic Treaty Organization
AS	Arthritis Society	NCI	National Cancer Institute Of Canada
ASSCH	Alberta Social Services And Community Health	NCOR	Novacor Chemicals Limited
ASWC	Alberta Sheep And Wool Commission	NGS	National Geographic Society
AT	Alberta Transportation	NIMR	G Allan Roeher Institute
ATOUR	Alberta Tourism	NORSK	Norsk Hydro
ATRT	Alberta Technology, Research And Telecommunications	NOVA	Nova Corporation
AWP	Alberta Wheat Pool	NRC	National Research Council Of Canada
AWWA	American Water Works Association	NSERC	Natural Sciences And Engineering Research Council
BCHC	British Columbia Health Care	NSF	National Science Foundation
BIOM	Biomira Incorporated	OMAC	Occupational Medical Association Of Canada
BM	Bristol-Myers Company	ORTHO	Ortho Pharmaceuticals
BVI	Bow Valley Industries Limited	PAE	Petroleum Aid To Education Trust Fund
CCA	Canadian Council Of Archives	PALM	Palm Dairies-Cringle Foundation
CCAC	Consumer And Corporate Affairs Canada	PC	Parks Canada
CCC	Canola Council Of Canada	PCS	Potash Corporation Of Saskatchewan
CCFF	Canadian Cystic Fibrosis Foundation	PENN	Pennwalt Corporation
CDA	Canadian Diabetes Association	PFIZ	Pfizer Incorporated
CDLA	Canadian Library Association	PMI	Pitman-Moore Incorporated
CE	City Of Edmonton	PPI	Potash And Phosphate Institute
CEA	Canadian Electrical Association	RCMP	Royal Canadian Mounted Police
CEMA	Canadian Egg Marketing Agency	RHONE	Rhone-Poulenc Pharmaceuticals Incorporated
CFIC	Canadian Foundation For Ileitis And Colitis	ROTCL	Rotary Club
CFS	Canadian Forestry Service	RPWF	Recreation, Parks And Wildlife Foundation
CFUS	Canadian Foundation For Ukrainian Studies	SEARL	Searle, G D And Company Of Canada Limited
CGC	Canada Grains Council	SERAG	Seragen Incorporated
CGPA	Canadian Gas Processors Association	SGC	Solicitor General Canada
CHEL	Canadian Hunter Exploration Limited	SPC	Sport Canada
CHEM	Chembiomed Limited	SRMP	Sr Metal Protection Limited
CHF	Canadian Heart Foundation	SSC	Secretary Of State Canada
CIBAC	Ciba-Corning Limited	SSHRC	Social Sciences And Humanities Research Council
CIDS	Canadian Infectious Diseases Society	STEL	Stelco Incorporated
		SYN	Syntex Incorporated
		TAIHO	Taiho Pharmaceuticals Limited

TAUC	Transalta Utilities Corporation
TTU	Texas Tech University
TWH	Toronto Western Hospital
UFL	U F L Foods Incorporated
UNGG	United Grain Growers
USAF	U S Air Force
USDA	U S Department Of The Army
USFS	United States Forest Service
USNIH	U S Public Health Services
UT	University Of Toronto
UVIC	University Of Victoria
WCOF	Western Co-Operative Fertilizers Limited
WGRF	Western Grains Research Foundation
WRC	Welding Research Council
WRFN	Wild Rose Foundation

Agencies by Category

Alberta Government Agency

ACB	Alberta Cancer Board
AMHAC	Alberta Mental Health Advisory Council
ARCA	Agriculture Research Council Of Alberta

Alberta Government Crown Corporation

AECC	Alberta Educational Communications Corporation
AGT	Alberta Government Telephones
AOSTR	Alberta Oil Sands Technology And Research Authority
ARC	Alberta Research Council

Alberta Government Department

AAEM	Alberta Advanced Education
AC	Alberta Culture And Multiculturalism
ACOH	Alberta Community And Occupational Health
ADA	Alberta Department Of Agriculture
AE	Alberta Environment
AED	Alberta Education
AENR	Alberta Energy
AF	Alberta Department Of Forestry
AHPW	Alberta Housing And Public Works
ALED	Alberta Economic Development
ARP	Alberta Recreation And Parks
ASSCH	Alberta Social Services And Community Health
AT	Alberta Transportation
ATOUR	Alberta Tourism
ATRT	Alberta Technology, Research And Telecommunications

Alberta Government Foundation/Trust

AART	Alberta Agricultural Research Trust
AERT	Alberta Environmental Research Trust
AFDRT	Alberta Forest Development Research Trust
AFLA	Alberta Foundation For The Literary Arts
AFNR	Alberta Foundation For Nursing Research
AHFMR	Alberta Heritage Foundation For Medical Research
RPWF	Recreation, Parks And Wildlife Foundation
WRFN	Wild Rose Foundation

Canadian Government Agency

CCA	Canadian Council Of Archives
CIIPS	Canadian Institute For International Peace And Security
MRC	Medical Research Council
NRC	National Research Council Of Canada
NSERC	Natural Sciences And Engineering Research Council
SSHRC	Social Sciences And Humanities Research Council

Canadian Government Crown Corporation

AECL	Atomic Energy Of Canada
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Canadian Government Department

AGCA	Agriculture Canada
CCAC	Consumer And Corporate Affairs Canada
CFS	Canadian Forestry Service
DINA	Department Of Indian And Northern Affairs
DND	Department Of National Defence
DRIE	Department Of Regional Industrial Expansion
EC	Environment Canada
EIC	Employment And Immigration Commission
EMRC	Energy, Mines And Resources Canada
FAS	Fitness And Amateur Sport
FOC	Fisheries And Oceans Canada
HWC	Health And Welfare Canada
PC	Parks Canada
RCMP	Royal Canadian Mounted Police
SGC	Solicitor General Canada
SPC	Sport Canada
SSC	Secretary Of State Canada

Canadian Government Foundation/Trust

IDRC	International Development Research Center
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Canadian Private Association/Society

AARN	Alberta Association Of Registered Nurses
ABA	Alberta Beekeepers Association
AFL	Alberta Federation Of Labour
AMUSA	Alberta Museums Association
APA	Alberta Pharmaceutical Association
APPM	Alberta Pork Producers Marketing Board
AS	Arthritis Society
ASWC	Alberta Sheep And Wool Commission
CCC	Canola Council Of Canada
CCFF	Canadian Cystic Fibrosis Foundation
CDA	Canadian Diabetes Association
CDLA	Canadian Library Association
CEA	Canadian Electrical Association
CEMA	Canadian Egg Marketing Agency
CGC	Canada Grains Council
CGPA	Canadian Gas Processors Association
CIDS	Canadian Infectious Diseases Society
CPSYA	Canadian Psychological Association
CRIAW	Canadian Research Institute For The Advancement Of Women
DN	Dene Nation
MDA	Muscular Dystrophy Association Of Canada
NCI	National Cancer Institute Of Canada
NIMR	G Allan Roeher Institute
OMAC	Occupational Medical Association Of Canada
PPI	Potash And Phosphate Institute
ROTCL	Rotary Club
WRC	Welding Research Council

Canadian Private Donor

MISC	Miscellaneous Private Donations
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Canadian Private Foundation/Trust

ALF	Alberta Law Foundation
CFIC	Canadian Foundation For Ileitis And Colitis
CFUS	Canadian Foundation For Ukrainian Studies
CHF	Canadian Heart Foundation
KFC	Kidney Foundation Of Canada
MSI	MSI Foundation
PALM	Palm Dairies-Cringle Foundation
WGRF	Western Grains Research Foundation

Canadian Private Industry/Business

AFP	Alberta Food Products
AMOCO	Amoco Canada Petroleum Company Limited
ANAQ	Anaquest
AWP	Alberta Wheat Pool
BIOM	Biomira Incorporated

BVI Bow Valley Industries Limited
 CHEL Canadian Hunter Exploration Limited
 CHEM Chembiomed Limited
 CIBAC Ciba-Corning Limited
 CIL C-I-L Incorporated
 COM Cominco
 CYAN Cyanamid
 DUP Du Pont Canada Incorporated
 EGH Edmonton General Hospital
 HEINZ Heinz Company Of Canada
 HRUD Hruday, Steve E And Associates Limited
 IMC International Minerals Corporation
 IOL Imperial Oil Limited
 KSC Kellogg Salada Canada Incorporated
 LGL L G L Limited
 LSC Landis Seed Canada Limited
 LTI Liposome Technology Incorporated
 MRW Morris Rod Weeder Company Limited
 NCOR Novacor Chemicals Limited
 NOVA Nova Corporation
 ORTHO Ortho Pharmaceuticals
 PAE Petroleum Aid To Education Trust Fund
 RHONE Rhone-Poulenc Pharmaceuticals Incorporated
 SEARL Searle, G D And Company Of Canada Limited
 SRMP Sr Metal Protection Limited
 STEL Stelco Incorporated
 SYN Syntex Incorporated
 TAIHO Taiho Pharmaceuticals Limited
 TAUC Transalta Utilities Corporation
 TWH Toronto Western Hospital
 UFL U F L Foods Incorporated
 UNGG United Grain Growers
 WCOF Western Co-Operative Fertilizers Limited

Foreign Private Industry/Business

NORSK Norsk Hydro

Multi-National Agency

NATO North Atlantic Treaty Organization

Other Canadian University

UT University Of Toronto
 UVIC University Of Victoria

Other Government - Municipal

CE City Of Edmonton
 EBH Edmonton Board Of Health

Other Government Crown Corporation

PCS Potash Corporation Of Saskatchewan

Other Govt. Agency/Foundation/Dept.

BCHC British Columbia Health Care
 GNWT Government Of The Northwest Territories

US Govt. Agency/Foundation/Dept.

NSF National Science Foundation
 USAF U S Air Force
 USDA U S Department Of The Army
 USFS United States Forest Service
 USNIH U S Public Health Services

US Private Agency/Foundation/Donor

ACS American Chemical Society
 AWWA American Water Works Association
 MDBDF March Of Dimes Birth Defects Foundation
 NGS National Geographic Society
 TTU Texas Tech University

US Private Industry/Business

BM Bristol-Myers Company
 PENN Pennwalt Corporation
 PFIZ Pfizer Incorporated
 PMI Pitman-Moore Incorporated
 SERAG Seragen Incorporated

Award Codes

CFC Conference Grant
 CTR Contract Research
 EQP Equipment Grant
 INF Infrastructure Grant
 OPR Operating Grant
 TTR Technology Transfer Grant

Faculty of Agriculture and Forestry

Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	28	\$ 675,209	NSERC	51	\$ 1,464,224
Equipment	5	\$ 126,315	Other Provincial	97	\$ 2,240,459
Operating	175	\$ 4,258,666	Other Federal	16	\$ 634,286
Total	208	\$ 5,060,190	Other Agencies	44	\$ 721,221
			Total	208	\$ 5,060,190

Faculty of Agriculture and Forestry

Investigator	Project Title	Award	Amount	Agency	
Dean					
	In Support of Agricultural Research	OPR	\$ 10,000	AGCA	
	To Improve Forest Education in Canada	OPR	\$ 346,000	CFS	
	Genetic Variation and Adaptation Among Populations of Lodgepole Pine in Alberta	OPR	\$ 175,000	NSERC	
Type of Award	No.	Amount	Source of Funds	No.	Amount
Operating	3	\$ 531,000	NSERC	1	\$ 175,000
			Other Federal	2	\$ 356,000
			Total	3	\$ 531,000

Department of Agricultural Engineering

Investigator	Project Title	Award	Amount	Agency	
Bach, L	Wood Rheology: Time-dependent Deformations in Solid Wood Products under Various Modes of Mechanical Loading	OPR	\$ 11,520	NSERC	
Domier, K W	Co-investigator with Robertson, J A (Soil Science): Residual Effects of Previously . . .				
	Metering and Placement of Urea Super Granules	OPR	\$ 11,000	AART	
	Metering and Placement of Urea Super Granules	OPR	\$ 10,000	NORSK	
	Energy Requirements of Pneumatic Transport of Granular Fertilizer	OPR	\$ 7,220	NSERC	
Feddes, J J	Co-investigator with Young, B A (Animal Science): Thermodynamics in Overwintering . . .				
	Heat Loss from Black-Iron Hot-Water Heating Pipe	OPR	\$ 28,400	ADA	
Harrison, H P	Investigation of a Bent Legged Plow	OPR	\$ 5,692	AART	
	The Effect Of Perforated Floor Options On The Air Distribution Within A Bin	OPR	\$ 34,000	ADA	
	Investigation of a Bent Legged Plow	OPR	\$ 5,700	MRW	
Leonard, J J	Design of High Pressure Air Inlets for Winter Ventilation of Animal Housing	OPR	\$ 13,000	AART	
	Co-investigator with Young, B A (Animal Science): Thermodynamics in Overwintering . . .				
	Co-investigator with Feddes, J J: Heat Loss from Black-Iron Hot-Water . . .				
	Instrumentation to Determine Actual Grain Loss from Combine Straw Walkers	OPR	\$ 10,000	AGCA	
McQuitty, J B	Use of Indirect Calorimetry to Measure Animal Heat Production in Commercial Confinement Facilities	OPR	\$ 11,600	NSERC	
Micko, M M	Alberta Aspen vs Black Poplar Wood/Product Quality Differences. Phase I: Waferboard/OSB	CTR	\$ 21,585	ARC	
<hr/>					
Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	1	\$ 21,585	NSERC	3	\$ 30,340
Operating	11	\$ 148,132	Other Provincial	6	\$ 113,677
Total	12	\$ 169,717	Other Federal	1	\$ 10,000
			Other Agencies	2	\$ 15,700
			Total	12	\$ 169,717

Department of Animal Science

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Aherne, F X				
	Management of Reproductive Problems in Swine Herds	OPR \$	5,300	AART
	Influence of Feed Level and Body Condition Between Weaning and Mating on Sow Reproductive Performance	OPR \$	12,416	AART
	An Evaluation of the Nutritive Value of Full Fat Canola Seed for Young Pigs	OPR \$	11,626	AART
	Management of Reproductive Problems in Swine Herds	OPR \$	10,620	APPM
	Interaction Between Feed Intake During Lactation and Pregnancy and Sow Reproductive Performance	OPR \$	70,900	ARCA
	An Evaluation of the Nutritive Value of Full Fat Canola Seed for Young Pigs	OPR \$	10,569	CCC
	The Etiology of Degenerative Joint Abnormalities and Leg Weakness in Swine	OPR \$	35,682	NSERC
	Evaluation of the Feeding Value of Damaged Grains for Livestock	OPR \$	40,000	WGRF
Baracos, V E				
	Protein Metabolism During Fever and Infection in Domestic Livestock	OPR \$	53,100	ARCA
	Regulation of Protein Metabolism in the Tumor-Bearing Host	OPR \$	15,875	NCI
	Control of Growth and Atrophy of Skeletal Muscle	OPR \$	15,360	NSERC
	Co-investigator with Thompson, J R: Spectrofluorimeter . . .			
	Co-investigator with Christopherson, R J: Refrigerated Centrifuge . . .			
Berg, R T				
	Efficiency Models in Cow Calf Systems	OPR \$	11,000	ARCA
Christopherson, R J				
	Nutrient Effects on Energy Metabolism, Appetite and Cold Tolerance	OPR \$	30,000	ARCA
	Influence of Temperature on Protein and Amino Acid Digestion in Ruminants	OPR \$	34,000	ARCA
	Co-investigator with Thompson, J R: Regulation of Skeletal Muscle Protein . . .			
	Control of Digestion and Metabolism in Animals	OPR \$	24,960	NSERC
	Refrigerated Centrifuge	EQP \$	22,075	NSERC
	Co-investigator with Thompson, J R: Spectrofluorimeter . . .			
Hudson, R J				
	Nutrition and Management of Wapiti	OPR \$	29,000	ARCA
	Ecological Bioenergetics of Native Ruminants	OPR \$	24,000	NSERC
Kennelly, J J				
	Effects of Ammonia on the Preservation, and the Nutritive Value of High Moisture Barley	OPR \$	8,990	AART
	Storage of High Moisture Grain	OPR \$	6,000	AART
	Growth Hormone for Dairy Cattle - Mode of Action and Effect on Milk Production and Reproductive Performance	OPR \$	80,000	ARCA
	Factors Influencing the Efficiency of Protein (amino acids) and Energy Utilization by Dairy Cows	OPR \$	65,000	ARCA
	Effect of Jet-Sploding and Extrusion on the Nutritive Value of Canola Meal and Whole Canola Seed for Dairy Cattle	OPR \$	16,000	CCC
	Storage of High Moisture Grain	OPR \$	12,000	CIL
	Efficacy of Recombinant Bovine Somatotropin (bSTH) Injected Daily in Lactating Dairy Cows at 2 Dosage Levels	CTR \$	47,552	CYAN
	Efficacy of Recombinant Bovine Somatotropin (BST) in Lactating Dairy Cows	CTR \$	40,600	CYAN
	Effect of Ammonia on the Preservation, and the Nutritive Value of High Moisture Barley	OPR \$	8,000	IOL
	Rare Earth Elements as Markers in Digestive Physiology	OPR \$	26,880	NSERC
	Co-investigator with Aherne, F X: Evaluation of the Feeding Value . . .			
Makarechian, M				
	Co-investigator with Price, M A: The Influence of Pre and Post Weaning . . .			
Mathison, G W				
	Co-investigator with Kennelly, J J: Storage of High Moisture Grain . . .			
	Effect of B-Glucans in Barley on Digestion and Metabolism in Ruminants	OPR \$	28,000	ARCA
	Energetic Efficiencies of Ruminants	OPR \$	28,000	ARCA
	Improving the Nutritive Value of Straw	OPR \$	17,800	ARCA
	Co-investigator with Christopherson, R J: Refrigerated Centrifuge . . .			
	Co-investigator with Aherne, F X: Evaluation of the Feeding Value . . .			

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Price, M A				
	Seasonal Changes in Body Composition of Bison in the McKenzie Bison Sanctuary, Fort Providence, N.W.T.	OPR \$	13,125	AART
	Studies on the Effects of RALGRO on Cow Reproduction and Growth of Calves	OPR \$	3,500	AART
	The Use of Young Boars in Commercial Pork Production	OPR \$	6,825	AART
	The Influence of Pre and Post Weaning Growth Rate, Reproductive Performance of Beef Heifers	OPR \$	37,000	ARCA
	Seasonal Changes in Body Composition of Bison in the McKenzie Bison Sanctuary, Fort Providence, N.W.T.	OPR \$	20,000	GNWT
	Studies on the Effects of RALGRO on Cow Reproduction and Growth of Calves	OPR \$	7,000	IMC
Robblee, A R				
	Co-investigator with Crawford, R J (Science, Chemistry): Mass Spectrometry Service Laboratory . . .			
Salmon, R K				
	Molecular Analysis of the Superior Growth Characteristics in a Growth-Selected Line of Cattle	OPR \$	25,200	AART
Sauer, W C				
	Protein and Amino Acid Nutrition of Dairy Calves	OPR \$	32,000	ARCA
	The Formulation of Pig Diets on the Basis of the Digestible Supply of Amino Acids	OPR \$	40,290	ARCA
	Determination of Amino Acid Digestibilities with the 15N-Isotope Dilution Technique in Feedstuffs for Pigs	OPR \$	40,290	ARCA
	The Effect of Anti-nutritional Factors on Pancreatic Enzyme Secretion and Amino Acid Nutrition in Pigs	OPR \$	29,043	NSERC
Shires, A				
	Co-investigator with Aherne, F X: Evaluation of the Feeding Value . . .			
Sim, J S				
	Sequential Morphometric-Radiographic Study of Tibial Bone and Etiology of Twisted Leg Disorders in Commercial Broiler Strains	OPR \$	26,000	AART
	Hyaluronic Acid Production from Poultry Waste Materials	OPR \$	10,560	AGCA
	Egg Yolk Product Development	CTR \$	68,626	CEMA
	Lecithin Separation from Egg Yolk by Aqueous Extraction Method	OPR \$	50,000	NSERC
Thompson, J R				
	Regulation of Skeletal Muscle Protein Growth in Cattle	OPR \$	56,000	ARCA
	Protein Turnover in Skeletal Muscle	OPR \$	16,000	NSERC
	Co-investigator with Christopherson, R J: Refrigerated Centrifuge . . .			
	Spectrofluorimeter	EQP \$	19,740	NSERC
Young, B A				
	Thermodynamics in Overwintering Bee Colonies	OPR \$	10,438	AART
	Thermodynamics in Overwintering Bee Colonies	OPR \$	8,000	ABA
	Within and Between Breed Variation in Cold Hardiness of Cattle	OPR \$	38,000	ARCA
	Environmentally Induced Adaptive Changes in Whole-Animal Metabolism	OPR \$	15,000	NSERC
	Co-investigator with Christopherson, R J: Refrigerated Centrifuge . . .			
	Co-investigator with Clandinin, M T (Home Economics, Foods and Nutrition): Bellows Assembly for Existing Isotope . . .			

Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	3	\$ 156,778	NSERC	11	\$ 278,740
Equipment	2	\$ 41,815	Other Provincial	28	\$ 819,800
Operating	48	\$ 1,215,349	Other Federal	1	\$ 10,560
Total	53	\$ 1,413,942	Other Agencies	13	\$ 304,842
			Total	53	\$ 1,413,942

Department of Entomology

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Ball, G E				
	Studies in Insect Taxonomy	OPR \$	48,000	NSERC
Craig, D A				
	Biology of Aquatic Insects	OPR \$	17,280	NSERC
Evans, W G				
	Co-investigator with Young, B A (Animal Science): Thermodynamics in Overwintering . . .			
	Co-investigator with Crawford, R J (Science, Chemistry): Mass Spectrometry Service Laboratory . . .			
	Chemical ecology of predatory soil insect guilds	OPR \$	10,000	NSERC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Gooding, R H	Tryptophan Metabolism, Reproduction and Hybrid Sterility in the Tsetse Fly (<i>Glossina morsitans</i>)	OPR	\$ 36,480	NSERC	
Heming, B S	Studies in Insect Structure and Development	OPR	\$ 7,123	NSERC	
Langor, D W	Co-investigator with Spence, J R: Host Effects on Genetics and Behaviour . . .				
Mitchell, B K	Studies on Insect Chemoreception	OPR	\$ 20,836	NSERC	
Spence, J R	Host Effects on Genetics and Behaviour of the Mountain Pine Beetle	OPR	\$ 8,221	AFDRT	
	PRUF Program - Host Effects on Population Dynamics and Differentiation of the Mountain Pine Beetle in Southwestern Alberta	CTR	\$ 17,730	CFS	
	Co-investigator with Dean (Agriculture and Forestry): Genetic Variation and Adaptation . . .				
	Studies in Insect Population Biology	OPR	\$ 27,500	NSERC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Contracts	1	\$ 17,730	NSERC	7	\$ 167,219
Operating	8	\$ 175,440	Other Provincial	1	\$ 8,221
Total	9	\$ 193,170	Other Federal	1	\$ 17,730
			Total	9	\$ 193,170

Department of Food Science

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Hadziyev, D	Co-investigator with Crawford, R J (Science, Chemistry): Mass Spectrometry Service Laboratory . . .			
	Co-investigator with Ozimek, L: For the Purchase of a Varian High . . .			
	Co-investigator with Stiles, M E: Ultracentrifuge . . .			
	Farinaceous Properties of Alberta Cereals and Pulses Subjected to Dry Extrusion	CTR \$	20,600	UFL
Jelen, P	Ultrafiltration of Cottage Cheese Whey for New Dairy Product Use	OPR \$	8,288	AART
	Properties and Reactions of Cheese Whey Components	OPR \$	29,194	NSERC
	Ultrafiltration of Cottage Cheese Whey for New Dairy Product Use	OPR \$	8,500	PALM
Le Maguer, M	Engineering Development & Economic Analysis of the Dehydrocooling Process	OPR \$	36,000	ARCA
	Migration of Solutes During Water Removal in Foodstuffs	OPR \$	21,000	NSERC
Ooraikul, B	Food Sauce from Canola Meal	OPR \$	12,325	AART
	Food Sauce from Canola Meal	OPR \$	5,000	AFP
	Study of Glucose Oxidase and Its Use in Preventing Non-Enzymatic Browning in Potato Products	OPR \$	35,000	ARCA
	Co-investigator with Ozimek, L: For the Purchase of a Varian High . . .			
	Co-investigator with Stiles, M E: Ultracentrifuge . . .			
Ozimek, L	Physico-Chemical Properties of Ultrafiltration Milk Retentates for Cheesemaking	OPR \$	14,000	AART
	For the Purchase of a Varian High Performance Liquid Chromatography System	EQP \$	35,000	NSERC
Palcic, M M	Isotopic and Stereochemical Probes of Monoamine Oxidase	OPR \$	21,696	NSERC
	Co-investigator with Hindsgaul, O (Science, Chemistry): Development of ELISA Assays for . . .			
	Co-investigator with Ozimek, L: For the Purchase of a Varian High . . .			
	Co-investigator with Stiles, M E: Ultracentrifuge . . .			
Sporns, P	Investigation of pH and Temperature Effects on Maillard Reaction Mechanisms Using HPLC Analysis of Intermediates	OPR \$	9,600	NSERC
	Co-investigator with Stiles, M E: Ultracentrifuge . . .			
	Co-investigator with Ozimek, L: For the Purchase of a Varian High . . .			
Stiles, M E	Survival and Detection of Enterobacteriaceae in model systems	OPR \$	13,177	NSERC
	Ultracentrifuge	EQP \$	37,000	NSERC

Investigator	Project Title	Award	Amount	Agency																														
Wolfe, F H																																		
	Evaluation of the Effects of Non-meat Ingredients on Functional Properties of Meat Emulsions	OPR \$	16,000	ARCA																														
	Effects of Electrical Stimulation on Calcium Activated Neutral Protease and Z-disc Actin in Beef	OPR \$	69,000	ARCA																														
	Physicochemical Studies on Food Proteins and Myosystems	OPR \$	15,582	NSERC																														
	Co-investigator with Stiles, M E: Ultracentrifuge . . .																																	
<table><tr><td>Type of Award</td><td>No.</td><td>Amount</td><td>Source of Funds</td><td>No.</td><td>Amount</td></tr><tr><td>Contracts</td><td>1</td><td>\$ 20,600</td><td>NSERC</td><td>8</td><td>\$ 182,249</td></tr><tr><td>Equipment</td><td>2</td><td>\$ 72,000</td><td>Other Provincial</td><td>7</td><td>\$ 190,613</td></tr><tr><td>Operating</td><td>15</td><td>\$ 314,362</td><td>Other Agencies</td><td>3</td><td>\$ 34,100</td></tr><tr><td>Total</td><td>18</td><td>\$ 406,962</td><td>Total</td><td>18</td><td>\$ 406,962</td></tr></table>					Type of Award	No.	Amount	Source of Funds	No.	Amount	Contracts	1	\$ 20,600	NSERC	8	\$ 182,249	Equipment	2	\$ 72,000	Other Provincial	7	\$ 190,613	Operating	15	\$ 314,362	Other Agencies	3	\$ 34,100	Total	18	\$ 406,962	Total	18	\$ 406,962
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Contracts	1	\$ 20,600	NSERC	8	\$ 182,249																													
Equipment	2	\$ 72,000	Other Provincial	7	\$ 190,613																													
Operating	15	\$ 314,362	Other Agencies	3	\$ 34,100																													
Total	18	\$ 406,962	Total	18	\$ 406,962																													
Department of Forest Science																																		
Investigator	Project Title	Award	Amount	Agency																														
Beck, J A																																		
	Remeasure 25 Permanent Sample Plots and Perform Maintenance as Necessary at Locations Throughout Alberta	CTR \$	26,000	AENR																														
	Stem Analysis	CTR \$	6,000	AENR																														
	Maintenance of Permanent Sample Plots	CTR \$	20,000	AENR																														
	Remeasurement of Permanent Sample Plots	CTR \$	15,000	AENR																														
	Locate and Measure Field Plots Required to 'Ground Truth' Experimental Aerial Photography	CTR \$	20,000	AF																														
	An Economic Analysis of the Alberta Timber Supply	CTR \$	80,000	AGCA																														
Dancik, B P																																		
	Co-investigator with Higginbotham, K O: Mycorrhizal Inoculum Production . . .																																	
	PRUF Program - Early Progeny Evaluation	CTR \$	47,902	AGCA																														
	Editorial Support Services - To Cover the Cost of Editorial Support Services and Incidental Expenses Incurred by Dr B Dancik as Editor of the Canadian Journal of Forest Research	CTR \$	40,000	NRC																														
	Co-investigator with Dean (Agriculture and Forestry): Genetic Variation and Adaptation . . .																																	
	Very Early Evaluation of Conifer Family Growth at Harvest Age	OPR \$	60,000	NSERC																														
	Mating System and Selection Components of Conifers	OPR \$	19,500	NSERC																														
Hellum, A K																																		
	Seed From Spruce Residuals on Cutovers in Central Alberta	OPR \$	13,650	AFDRT																														
Higginbotham, K O																																		
	Mycorrhizal Inoculum Production and Compatability Testing	CTR \$	9,254	AF																														
Hiratsuka, Y																																		
	Co-investigator with Ayer, W A (Science, Chemistry): Phytochemical Investigation of . . .																																	
Lieffers, V J																																		
	Effects of Change in Water Table Height on Peatland Black Spruce and Tamarack	OPR \$	15,000	NSERC																														
Murphy, P J																																		
	A Study to Analyze Alternatives for Wood Bison Management in Banff National Park	CTR \$	5,000	PC																														
Rothwell, R L																																		
	Evapotranspiration Regimen of Tri Creeks Experimental Watershed, 1984-1986	CTR \$	9,592	AENR																														
	Field Evaluation of an Erosion Hazard Assessment System in West Central Alberta	OPR \$	6,600	AFDRT																														
	Freeze/Thaw Cycles on a Drained and Undrained Boreal Wetland Site	OPR \$	8,790	AFDRT																														
	Testing and Validation of the U S Forest Services Approach to Water Resource Evaluation of Non-Point Silvicultural Sources (WRENSS) for Application to Canada	CTR \$	5,099	AGCA																														
	PRUF Program - Validating WRENSS for Application to Canadian Watersheds	CTR \$	5,000	CFS																														
Titus, S J																																		
	Development of a Stem Area Growth Function	OPR \$	3,000	AFDRT																														
	An Evaluation of Bayesian Estimation Procedures Applied to Log Scaling Inventory	OPR \$	4,800	NSERC																														
Woodard, P M																																		
	Effects of Combustion Residue on Lodgepole Pine, Engelmann Spruce and Subalpine Fir Seed Germination	OPR \$	7,680	NSERC																														
Yeh, F C																																		
	Genetic Structure of Forest Trees	OPR \$	28,000	NSERC																														
	Co-investigator with Dean (Agriculture and Forestry): Genetic Variation and Adaptation . . .																																	

Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	13	\$ 288,847	NSERC	6	\$ 134,980
Operating	10	\$ 167,020	Other Provincial	11	\$ 137,886
Total	23	\$ 455,867	Other Federal	6	\$ 183,001
			Total	23	\$ 455,867

Department of Plant Science

Investigator	Project Title	Award	Amount	Agency
Andrew, W T	Regional Potato Cultivar Evaluation	OPR	\$ 36,000	ARCA
Bailey, A W	Effect of Grazing on Plains Rough Fescue	OPR	\$ 10,000	AGCA
	Effect of Grazing on Forage and Beef Production from Rough Fescue Rangeland in Central Alberta	OPR	\$ 44,000	ARCA
	The Impacts of Grazing on the Rangeland Ecosystem - Thesis Support for Anne Naeth	OPR	\$ 45,000	NOVA
Blenis, P V	Dry Spore Application, Water-Suspended Spore Application, and Oil- Suspended Spore Application	CTR	\$ 30,888	AENR
	Effect of Soil Factors on Armillaria Root Rot	OPR	\$ 9,538	AFDRT
	PRUF Program - Epidemiology of Armillaria Root Rot in Alberta	CTR	\$ 24,995	CFS
	Epidemiology of Western Gall Rust	OPR	\$ 16,692	NSERC
Briggs, K G	Varietal testing of cereal and oilseed crops	OPR	\$ 24,500	ADA
	Studies of Extreme Strong Straw Strength in Semidwarf 6 Row Barley	OPR	\$ 28,000	ARCA
	Intensive Culture of Wheat in Canada	CTR	\$ 41,500	CGC
	Genetic Studies of Aluminum Tolerant Wheats	OPR	\$ 14,617	NSERC
	Co-investigator with Taylor, G J (Science, Botany): Basic and Applied Aspects of Aluminum . . .			
	Evaluation of Early Maturing, High Yielding Wheats Bred Specifically for the Parkland Area of Western Canada	OPR	\$ 46,600	WGRF
Hiruki, C	Improved Diagnostic Techniques for Plant Mycoplasma Diseases by Biotechnological Approach	OPR	\$ 9,000	AART
	Improved Molecular Diagnosis of Potato Spindle Tuber Disease	OPR	\$ 44,400	ARCA
	1) Fungus Transmission of Plant Viruses 2) Plant Diseases Associated with Mollicutes Organisms	OPR	\$ 38,400	NSERC
	Identification and Control of Major Virus Diseases of Forage Legume Crops	OPR	\$ 33,900	NSERC
	Characterization of the Agent Causing Wheat Spot Mosaic Disease in Alberta	OPR	\$ 28,000	WGRF
King, J R	Seed Production and Soil Seed Populations Under the Savory Grazing Method	OPR	\$ 14,710	AART
	The Effect of the Savory Grazing Method on Plant Succession in Albertan Native Range	OPR	\$ 17,590	ARCA
	Germination and Establishment of Pasture Grass Species	OPR	\$ 32,250	ARCA
Knowles, N R	Controlling Tuber Yield and Grade by Manipulating the Physiological Age of Potato Seed-Tubers	OPR	\$ 23,688	AART
	Physiological Aging and Senescence of Potato Seed Tubers	OPR	\$ 10,866	NSERC
Kondra, Z P	Clonal Propagation of Canola	OPR	\$ 12,376	AART
	Clonal Propagation of Canola	OPR	\$ 6,000	AWP
	Agronomic Evaluation of Early Maturing, High Yielding Canola for Western Canada	OPR	\$ 51,500	WGRF
Nagarajan, P	Co-investigator with Walton, P D: A Comparative Study of Genetic . . .			
Saini, H S	Co-investigator with Tittle, F L: In Vitro Selection for Enhanced . . .			
Spencer, M E	Anaerobic Biological Degradation of Hazardous Organic Chemicals	OPR	\$ 17,250	AERT
	Ethylene and Plants	OPR	\$ 70,862	NSERC
	Co-investigator with Tittle, F L: In Vitro Selection for Enhanced . . .			

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Tewari, J P				
	Colonization of Barley in Alberta by the 'Biological Fertilizers'	OPR \$	8,925	AART
	The Mechanism of Necrosis in the Blackspot of Crucifers	OPR \$	10,000	AGCA
	Seedling Blight of Canola in Alberta	OPR \$	57,340	ARCA
	Co-investigator with Ayer, W A (Science, Chemistry): Investigation of American Leaf . . .			
	Host-parasite Interaction in the Blackspot Disease of Rapeseed Caused by Alternaria brassicae	OPR \$	15,000	NSERC
Tittle, F L				
	In Vitro Selection for Enhanced Winter Hardiness in Perennial Ryegrass (Lolium perenne)	OPR \$	1,108	UNGG
Toop, E W				
	Bedding Plant Trials, contributions for year 1986/87 ranged from \$20.00 to \$50.00	OPR \$	95	MISC
Vanden Born, W H				
	Canola Yield Losses Due to Weeds	OPR \$	9,400	AART
	A Long-Term Study on the Influence of Environmental Variables on Herbicide Efficacy	OPR \$	20,900	ARCA
	Contribution towards Herbicide Research	OPR \$	1,500	CYAN
	Chlorsulfuron Mechanism of Action and Metabolism Research	OPR \$	11,500	DUP
	Growth of Brassica campestris Field Test	CTR \$	4,500	LSC
	Behavior and Fate of Systemic Herbicides	OPR \$	20,301	NSERC
	Growth Regulators in Wheat and Barley	OPR \$	21,800	WGRF
	Herbicide Efficacy	OPR \$	12,000	WGRF
Walton, P D				
	Forage Productivity from Disturbed Areas	OPR \$	12,000	AART
	New Species of Grasses for Alberta	OPR \$	12,000	AART
	A Comparative Study of Genetic Variation Induced by Pan-Mixis and Tissue Culture	OPR \$	10,000	AGCA
	Research microscope: Olympus model BHS-270 photo microscope with dual head and reflected light fluorescence attachment, BH2-RFL-1	EQP \$	12,500	NSERC

<i>Type of Award</i>	<i>No.</i>	<i>Amount</i>	<i>Source of Funds</i>	<i>No.</i>	<i>Amount</i>
Contracts	4	\$ 101,883	NSERC	9	\$ 233,138
Equipment	1	\$ 12,500	Other Provincial	20	\$ 464,755
Operating	41	\$ 909,608	Other Federal	4	\$ 54,995
Total	46	\$ 1,023,991	Other Agencies	13	\$ 271,103
			Total	46	\$ 1,023,991

Department of Rural Economy

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Adamowicz, W L				
	Co-investigator with Veeman, M M: Performance of the Rapeseed Futures . . .			
	Co-investigator with Phillips, W E: To Extend Work on the Research . . .			
Apedaile, L P				
	The Impact of Structural Change in Japanese Agriculture on Future Japan/ Alberta	CTR \$	24,860	ALED
	Agricultural Trade - Graduate Student, Mari L Nakamura			
	Alberta - Heilongjiang: The Potential for Joint Ventures in the Beef Industry - Graduate Student, Ron Gietz	CTR \$	15,900	ALED
Bauer, L				
	An Economic Evaluation of Tillage Management Systems in the Dark Brown Soil Zone	OPR \$	14,000	ARCA
Hawkins, M H				
	Co-investigator with Lerohl, M L: Influence of Inspection, Grading . . .			
	Impact of Lamb Imports on the Alberta Lamb Industry	OPR \$	4,000	ASWC
Lerohl, M L				
	Influence of Inspection, Grading and Market Promotion on the Demand for Grain	OPR \$	12,255	AART
	The Impact of Grain Price Pooling on Alberta Farmer Returns and Prairie Transport Patterns	OPR \$	22,900	ARCA
	Co-investigator with Bauer, L: An Economic Evaluation of Tillage . . .			
	Influence of Inspection, Grading and Market Promotion on the Demand for Grain	OPR \$	12,000	AWP
Manning, T W				
	Co-investigator with Phillips, W E: The Production Structure of the . . .			
Petersen, T A				
	An Analysis of the Socio-Economic Efficiency of Alberta's Agricultural Land Tenure System	OPR \$	7,823	AART
	Analysis of Family Consumption Expenditures Related to Selected Farm Business Physical and Financial Variables	OPR \$	25,000	ARCA

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>			
Phillips, W E							
	The Production Structure of the Alberta and Canadian Farm Sector: A Frontier Cost Function Analysis	OPR \$	12,075	AART			
	Sub-Basin Water Management Planning Study in Northwestern Alberta	CTR \$	7,450	AE			
	Collection and Analysis of Data to Determine Economic Indicators for Spacing in Lodgepole and Jack Pine, Compilation of a Publications List Relating to Economic Returns from Spacing of Lodgepole and White Spruce Released from Aspen Competition	CTR \$	2,000	AGCA			
	To Extend Work on the Research Project on An Economic Evaluation of the Impact of Potential Expansion of the Agricultural Land Base in Alberta on Fish and Wildlife Resources Previously Funded by Alberta Energy and Natural Resources	OPR \$	4,000	LGL			
Veeman, M M							
	Co-investigator with Lerohl, M L: Influence of Inspection, Grading . . .						
	Export Markets for Western Canadian Wheat: Trends and Market Mix	OPR \$	10,000	ARCA			
	Macro-Economic Influences on Alberta Farmland Values	OPR \$	21,000	ARCA			
	Performance of the Rapeseed Futures Market	OPR \$	18,000	ARCA			
Veeman, T S							
	Co-investigator with Veeman, M M: Export Markets for Western Canadian . . .						
	Co-investigator with Veeman, M M: Macro-Economic Influences on Alberta . . .						
	Productivity Growth and Profitability in the Prairie Grains Sector	OPR \$	26,000	ARCA			
Type of Award		No.	Amount	Source of Funds			
Contracts	4	\$	50,210	Other Provincial	13	\$	217,263
Operating	13	\$	189,053	Other Federal	1	\$	2,000
Total	17	\$	239,263	Other Agencies	3	\$	20,000
				Total	17	\$	239,263

Department of Soil Science

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Chanasyk, D S				
	A Study of Water Erosion in the Peace River Region	OPR \$	48,900	ARCA
	Determine Changes in Soil Physical Conditions (Soil Tilth) Before and After Deep Ripping, Peat and Manure Treatments on Reclaimed Soils at TransAlta Utilities Highvale Mine	CTR \$	17,576	TAUC
Dudas, M J				
	Physical-chemical Effects of Nitrogen Fertilizers on Soils	OPR \$	10,853	AART
	Physical-chemical Effects of Nitrogen Fertilizers on Soils	OPR \$	24,670	ARCA
	(1) Dynamics of Heavy Metals in Soil Systems (2) Degradation and Authigenic Formation of Soil Minerals	OPR \$	19,417	NSERC
	Co-investigator with Juma, N G: Development of New Management Systems . . .			
	Physical-chemical Effects of Nitrogen Fertilizers on Soils	OPR \$	10,000	WCOF
Johnson, B N				
	Co-investigator with McGill, W B: Histochemical Aspects of Tree Root-Soil . . .			
Juma, N G				
	Co-investigator with Robertson, J A: Nutrient Supply and Budgets in . . .			
	Mechanisms of Biological Mineralization and Immobilization of Nitrogen in Soils	OPR \$	21,530	NSERC
	Development of New Management Systems to Counteract Soil Degradation	OPR \$	140,000	NSERC
McGill, W B				
	Histochemical Aspects of Tree Root-Soil Interactions	OPR \$	8,724	AFDRT
	Mechanisms Controlling Dynamics of Organic Materials in Soils	OPR \$	12,480	NSERC
Nyborg, M				
	Effect of Soil Moisture on Banding Nitrogen Fertilizers	OPR \$	8,000	AART
	A Study of Fall-applied Nitrogen: Timing of Soil Test for Nitrogen, Incorporation, and Banding	OPR \$	7,850	AART
	The Role of Nitrogen in Reclamation of Sulfur Laden Soils	OPR \$	7,300	AERT
	Improving the Efficiency of Soil Nitrogen and Fertilizer Nitrogen for Different Tillage-straw Systems	OPR \$	65,486	ARCA
	A Study of Fall Applied Nitrogen: Timing of Soil Test for Nitrogen, Incorporation, and Banding	OPR \$	7,900	IOL
	Effect of Soil Moisture on Banding Nitrogen Fertilizers	OPR \$	8,000	WCOF
	Increasing the Efficiency of Fertilizer Nitrogen and Soil Nitrogen for Cereal Grains and Oilseeds	OPR \$	12,000	WGRF

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Pawluk, S				
Co-investigator with Dudas, M J: Physical-chemical Effects of Nitrogen . . .				
Hydrological Influences upon Soil Pedogenesis	OPR	\$	45,871	NSERC
Co-investigator with Juma, N G: Development of New Management Systems . . .				
Co-investigator with Dudas, M J: Physical-chemical Effects of Nitrogen . . .				
Pluth, D J				
Co-investigator with La Roi, G H (Science, Botany): PRUF Program: Development of Lodgepole . . .				
Robertson, J A				
Residual Effects of Previously Applied P Fertilizer on Tilled and Untilled Soils	OPR	\$	12,000	AART
Recovery of Residual Potassium from Previous, High Plowdown Applications	OPR	\$	5,581	AART
Nutrient Supply and Budgets in Luvisolic Soils: Use of Manure and Role of Organisms	OPR	\$	88,880	ARCA
Recovery of Residual Potassium from Previous, High Plowdown Applications	OPR	\$	2,000	COM
Residual Effects of Previously Applied P Fertilizer on Tilled and Untilled Soils	OPR	\$	8,000	IOL
Recovery of Residual Potassium from Previous, High Plowdown Applications	OPR	\$	2,000	PCS
Recovery of Residual Potassium from Previous, High Plowdown Applications	OPR	\$	3,000	PPI
Residual Effects of Previously Applied P Fertilizer on Tilled and Untilled Soils	OPR	\$	5,000	WCOF
Webster, G R				
Reclamation of Solonetzic Soils	OPR	\$	23,260	NSERC

Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	1	\$ 17,576	NSERC	6	\$ 262,558
Operating	26	\$ 608,702	Other Provincial	11	\$ 288,244
Total	27	\$ 626,278	Other Agencies	10	\$ 75,476
			Total	27	\$ 626,278

Faculty of Arts

Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	4	\$ 19,400	NSERC	10	\$ 133,495
Contracts	8	\$ 182,029	SSHRC	23	\$ 346,850
Operating	35	\$ 512,254	Other Provincial	3	\$ 25,291
Total	47	\$ 713,683	Other Federal	6	\$ 66,223
			Other Agencies	5	\$ 141,824
			Total	47	\$ 713,683

Department of Anthropology

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Asch, M I				
Dene Mapping Project	CTR	\$	130,496	DN
Beattie, O B				
Completion of the Excavation and Forensic Analysis of Three Graves from the Last Franklin Expedition, 1846, Beechy Island, NWT	OPR	\$	17,396	SSHRC
Fedigan, L M				
Life Histories, Demography, and Reproduction in Polygamous Primates	OPR	\$	23,040	NSERC
Freeman, M M				
"Knowing the North: Integrating Tradition, Technology and Science", Nov 20-22, 1986, Edmonton, Alberta	CFC	\$	6,000	SSHRC
Lubell, D				
The Mesolithic/Neolithic Transition in Southern Portugal	OPR	\$	8,480	SSHRC
Schweger, C E				
Pleistocene Paleoecology and Stratigraphy of Alaska-Yukon Tephra and Paleoecology of the Ice-free Corridor, Alberta	OPR	\$	9,600	NSERC

Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	1	\$ 6,000	NSERC	2	\$ 32,640
Contracts	1	\$ 130,496	SSHRC	3	\$ 31,876
Operating	4	\$ 58,516	Other Agencies	1	\$ 130,496
Total	6	\$ 195,012	Total	6	\$ 195,012

Department of Classics

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Garbrah, K A	A Grammar of the Ionic Inscriptions from Chios	OPR	\$ 7,211	SSHRC
Rossiter, J	Temporary Assistant for Updating of Collections Records W.G. Hardy Collection of Near Eastern and Classical Antiquities	OPR	\$ 2,640	AMUSA
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i> <i>Amount</i>
Operating	2	\$ 9,851	SSHRC	1 \$ 7,211
			Other Agencies	1 \$ 2,640
			Total	2 \$ 9,851

Department of Comparative Literature

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Arnold, S H	Comparative Perspectives on the Works of Mongo Beti	OPR	\$ 8,760	SSHRC
Blodgett, E D	Towards a History of the Canadian Literary Institution: Problems of Literary Reception, University of Alberta, Oct 16-18, 1986	CFC	\$ 5,500	SSHRC
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i> <i>Amount</i>
Conferences	1	\$ 5,500	SSHRC	2 \$ 14,260
Operating	1	\$ 8,760		
Total	2	\$ 14,260		

Department of Economics

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Boothe, P M	Financial Market - Macro Linkages in Canada	OPR	\$ 10,846	SSHRC
Landon, S K	Sectoral Shocks and Unemployment in Canada	OPR	\$ 7,410	SSHRC
Livernois, J	Co-investigator with Scarfe, B L: Determinants of Exploration and . . .			
Percy, M B	PRUF - A General Equilibrium Model of the Forest Industry and Economy of British Columbia: Application to Intensive Forest Management and International Trade Issues	CTR	\$ 9,970	CFS
Ryan, D L	Co-investigator with Scarfe, B L: Determinants of Exploration and . . .			
Scarfe, B L	Determinants of Exploration and Development Activity Levels	OPR	\$ 10,000	EMRC
Szostak, R W	The Role of Transportation in the Industrial Revolution: A Comparison of Eighteenth Century England and France	OPR	\$ 4,470	SSHRC
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i> <i>Amount</i>
Contracts	1	\$ 9,970	SSHRC	3 \$ 22,726
Operating	4	\$ 32,726	Other Federal	2 \$ 19,970
Total	5	\$ 42,696	Total	5 \$ 42,696

Department of English

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Clements, P D	The Twentieth Century Section of a Book Titled, The Woman Writing: A Feminist Companion to Literature in English	OPR	\$ 25,140	SSHRC
Orrell, J O	The Interior Design of Shakespeare's Globe and Inigo Jone's Cockpit Theatres	OPR	\$ 3,510	SSHRC
Whitaker, M A	The Arthurian Legends in German Art	OPR	\$ 3,010	SSHRC
Operating		SSHRC	3	\$ 31,660

Department of History

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Foster, J E	Conference on the Mormon Presence in Canada, 1830-1887-1987: A North American Ethno-religious People in Canadian Cultures	CFC	\$ 4,400	SSC	
Langdon, J L	Medieval English Mills During the Reign of Edward II	OPR	\$ 2,850	SSHRC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Conferences	1	\$ 4,400	SSHRC	1	\$ 2,850
Operating	1	\$ 2,850	Other Federal	1	\$ 4,400
Total	2	\$ 7,250	Total	2	\$ 7,250

Department of Philosophy

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Cooper, W E	Western Canadian Philosophical Association Annual Conference, Oct 3-5, 1986, Edmonton, Alberta	CFC	\$ 3,500	SSHRC	
Gillon, B S	The Epistemology and Logic of Dharmakirti	OPR	\$ 24,304	SSHRC	
MacKenzie, C	Co-investigator with Cooper, W E: Western Canadian Philosophical . . .				
Matthen, M	Forms and Categories: A Study of the Greek Theory of Being	OPR	\$ 8,950	SSHRC	
	Co-investigator with Cooper, W E: Western Canadian Philosophical . . .				
Sharp, W D	Co-investigator with Cooper, W E: Western Canadian Philosophical . . .				
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Conferences	1	\$ 3,500	SSHRC	3	\$ 36,754
Operating	2	\$ 33,254			
Total	3	\$ 36,754			

Department of Political Science

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Keating, T	Co-investigator with Pratt, L R: We Stand on Guard for Whom? Strategy . . .				
Pratt, L R	We Stand on Guard for Whom? Strategy and Canadian Security Interests	OPR	\$ 7,000	CIIPS	
	Deregulation and North American Trade: The Political Economy of Natural Gas	OPR	\$ 11,323	SSHRC	
Stevenson, G	Canadian Federalism in the Age of John A. Macdonald	OPR	\$ 7,325	SSHRC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Operating	3	\$ 25,648	SSHRC	2	\$ 18,648
			Other Federal	1	\$ 7,000
			Total	3	\$ 25,648

Department of Psychology *see also Faculty of Science*

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Beck, C H M	Chronic Benzodiazepine Effects on Rat Social Behaviour	OPR \$	17,416	AMHAC
Bisanz, G L	Children's Use of Story Schemata: Second Generation Research	OPR \$	14,423	NSERC
Bisanz, J	Developmental Change and Individual Differences in Mathematical Skill	OPR \$	13,000	NSERC
Cornell, E H	Spatial Cognition and Wayfinding by Children	OPR \$	12,822	NSERC
Dixon, P	Basic and Complex Processes in Reading	OPR \$	14,423	NSERC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Friedman, A				
	Multiple Resources in Cerebral Specialization, Divided Attention and Mental Rotation	OPR \$	16,027	NSERC
Jutai, J W				
	Event-Related Brain Potential Assessment of Perceptual-Motor Function (Transfer from Concordia University, Montreal)	OPR \$	10,000	NSERC
Lechelt, E C				
	Perceptual Analysis of Tactile Spatiotemporal Patterns	OPR \$	12,480	NSERC
Rule, B G				
	Co-investigator with Dobbs, A R (Science): Minor Head Injury and Accident . . .			
	Co-investigator with Dobbs, A R (Science): Memory Deficits in the Aged . . .			
	The Development of a Schema and Text Processing	OPR \$	7,680	NSERC
	Scripts for Aggression	OPR \$	39,494	SSHRC
Type of Award		No.	Amount	Source of Funds
Operating		10	\$ 157,765	
				NSERC
				SSHRC
				Other Provincial
				Total
		8	\$ 100,855	
		1	\$ 39,494	
		1	\$ 17,416	
		10	\$ 157,765	

Department of Sociology

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Hackler, J C				
	Variability in Juvenile Justice	OPR \$	5,000	SSHRC
Hartnagel, T F				
	A Longitudinal Study of Youth Employment, Underemployment and Unemployment in Three Canadian Cities	OPR \$	77,638	SSHRC
Kennedy, L W				
	1987 All Alberta Study	CTR \$	5,250	AECC
	1987 All Alberta Study	CTR \$	2,187	AFL
	1987 All Alberta Study	CTR \$	2,625	AGT
	1987 All Alberta Study	CTR \$	1,750	APA
	1987 Edmonton Area Study	CTR \$	4,750	EBH
Kent, S A				
	Sects and Cults in Canada, 1970-1980: A Resource Mobilization Perspective	OPR \$	48,733	SSHRC
Krotki, K				
	Collaborative Study with Prof Balakrishnan of Univ of Western Ont and Mme Lapierre-Adamcyk of Univ of Montreal : Canadian National Fertility Study - \$157,929	OPR		SSHRC
Northcott, H				
	Co-investigator with Foster, J E (History): Conference on the Mormon Presence . . .			
Salamon, E D				
	Sexual Offences Against Male Children & Youths in Edmonton, 1980-85	OPR \$	9,853	SGC
	Sexual Offences Against Children and Youths in Edmonton 1980-1985	OPR \$	10,000	SSHRC
Silverman, R A				
	University of Alberta's Centre of Criminological Research	CTR \$	25,000	SGC
Type of Award		No.	Amount	Source of Funds
Contracts		6	\$ 41,562	SSHRC
Operating		5	\$ 151,224	Other Provincial
Total		11	\$ 192,786	Other Federal
				Other Agencies
				Total
		4	\$ 141,371	
		2	\$ 7,875	
		2	\$ 34,853	
		3	\$ 8,687	
		11	\$ 192,786	

Faculty of Business

Type of Award	No.	Amount
Operating	6	\$ 120,903
Total	6	\$ 120,903

Source of Funds	No.	Amount
NSERC	1	\$ 10,714
SSHRC	3	\$ 27,934
Other Provincial	1	\$ 63,400
Other Federal	1	\$ 18,855
Total	6	\$ 120,903

Department of Finance and Management Science

Investigator	Project Title	Award	Amount	Agency
Schaible, S	Generalized Convexity in Optimization and Economics	OPR	\$ 10,714	NSERC
Operating		NSERC	1	\$ 10,714

Department of Marketing and Economic Analysis

Investigator	Project Title	Award	Amount	Agency
Louviere, J J	Comparison of experimental and observational data choice models - Principal investigator is Dr. J. Horowitz at the University of Iowa -\$106,480.00 (Dr. Louviere is co-investigator)	OPR		NSF
	Work on design analysis of Urban Bicycle route choice behavior, Principal Investigator is Dr. Donald A. Anderson University of Wyoming - \$16,940.00 Dr. Louviere is co-investigator	OPR		USFS
Raworth, P	The Process of Economic Integration in the EEC and It's Significance for Canada	OPR	\$ 9,006	SSHRC
Operating		SSHRC	1	\$ 9,006

Department of Organizational Analysis

Investigator	Project Title	Award	Amount	Agency
Cullen, D	Co-investigator with Hall, A (Physical Education and Recreation, Physical Education and Sport Studies): The Status of Women in NSOs . . .			
Field, R H	Effects of Leader Training and Group Size on Decision Making Effectiveness	OPR	\$ 2,988	SSHRC
Gephart, R P	Organizational Design, Worker Safety and Petrochemical Accidents	OPR	\$ 63,400	ACOH
Hinings, C R	Planning, Organization and Implementation in High Performance Delivery Systems	OPR	\$ 18,855	FAS
Javidan, M	Strategic Change - A Study of the Canadian Banking Industry	OPR	\$ 15,940	SSHRC
Murray, A I	Co-investigator with Javidan, M: Strategic Change - A Study of the . . .			

Type of Award	No.	Amount
Operating	4	\$ 101,183

Source of Funds	No.	Amount
SSHRC	2	\$ 18,928
Other Provincial	1	\$ 63,400
Other Federal	1	\$ 18,855
Total	4	\$ 101,183

Faculty of Dentistry

Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	1	\$ 10,000	AHFMR	2	\$ 27,616
Operating	8	\$ 315,323	MRC	6	\$ 261,707
Total	9	\$ 325,323	Other Agencies	1	\$ 36,000
			Total	9	\$ 325,323

Faculty of Dentistry

Investigator	Project Title	Award	Amount	Agency	
Dean	General Research Grant to the Dean for the Support of Research in the Faculty of Dentistry	OPR	\$ 15,000	MRC	
Hargreaves, J A	Workshop on Research Directions on Epidemiology and Treatment of Dental Disease of the Elderly, to be held in Banff, Alberta, Oct 21-24/86	CFC	\$ 10,000	AHFMR	
Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	1	\$ 10,000	AHFMR	1	\$ 10,000
Operating	1	\$ 15,000	MRC	1	\$ 15,000
Total	2	\$ 25,000	Total	2	\$ 25,000

Department of Oral Biology

Investigator	Project Title	Award	Amount	Agency
Scott, P G				
	Proteoglycans of Non-Cartilage Tissue	OPR	\$ 59,652	MRC
	Maintenance Grant - Amino Acid Analyzer Technologist	OPR	\$ 26,367	MRC
	Collagen-degrading Proteinases from Cells of Human Gingiva	OPR	\$ 61,905	MRC
Operating		MRC	3	\$ 147,924

Department of Restorative Dentistry

Investigator	Project Title	Award	Amount	Agency	
Dederich, D N	Laser Applications in Endodontic Therapy	OPR	\$ 17,616	AHFMR	
Holland, G R	Oral Nerves and Their Response to Damage	OPR	\$ 54,359	MRC	
Type of Award	No.	Amount	Source of Funds	No.	Amount
Operating	2	\$ 71,975	AHFMR	1	\$ 17,616
			MRC	1	\$ 54,359
			Total	2	\$ 71,975

Department of Stomatology

Investigator	Project Title	Award	Amount	Agency	
Eggert, F M					
	Co-investigator with Scott, P G (Oral Biology): Maintenance Grant - Amino Acid . . .				
	The Reaction of Secretory Antibodies with Peridontal Pathogens	OPR	\$ 44,424	MRC	
	Co-investigator with Schuller, P: Comparison of Efficacy and Safety . . .				
Schuller, P					
	Comparison of Efficacy and Safety of Spiramycin and Placebo in the Treatment of Peridontal Disease	OPR	\$ 36,000	RHONE	
Type of Award	No.	Amount	Source of Funds	No.	Amount
Operating	2	\$ 80,424	MRC	1	\$ 44,424
			Other Agencies	1	\$ 36,000
			Total	2	\$ 80,424

Faculty of Education

Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	1	\$ 47,138	NSERC	1	\$ 6,946
Operating	6	\$ 50,514	SSHRC	4	\$ 40,068
Total	7	\$ 97,652	Other Provincial	2	\$ 50,638
			Total	7	\$ 97,652

Department of Educational Administration

Investigator	Project Title	Award	Amount	Agency
Konrad, A G				
	Authority of Governing Boards in Canadian Higher Education	OPR	\$ 14,127	SSHRC
Operating		SSHRC	1	\$ 14,127

Department of Educational Foundations

Investigator	Project Title	Award	Amount	Agency
Card, B Y				
	Co-investigator with Foster, J E (Arts, History): Conference on the Mormon Presence . . .			
Kach, N				
	Co-investigator with Foster, J E (Arts, History): Conference on the Mormon Presence . . .			

Department of Educational Psychology

Investigator	Project Title	Award	Amount	Agency	
Rodda, M					
	Communication Skills in Deaf Children and Adults	OPR	\$ 6,946	NSERC	
Sawatzky, D D					
	Family Form and Family Process: The Impact of the Changing Family on Children in Canada	OPR	\$ 3,000	SSHRC	
Type of Award	No.	Amount	Source of Funds	No.	Amount
Operating	2	\$ 9,946	NSERC	1	\$ 6,946
			SSHRC	1	\$ 3,000
			Total	2	\$ 9,946

Educational Research Services

Investigator	Project Title	Award	Amount	Agency
Hunka, S				
	Innovative Project: Survey of Digital Equipment VAX Computer Systems at Post-Secondary Institutions	OPR	\$ 3,500	AAEM
Operating		Other Provincial	1	\$ 3,500

Department of Elementary Education

Investigator	Project Title	Award	Amount	Agency	
Chamberlin, C	Sources of Elementary Teachers' Perspectives and Decisions	CTR	\$ 47,138	AED	
Fagan, W T	Adult Illiteracy and Developmental Factors	OPR	\$ 19,841	SSHRC	
Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	1	\$ 47,138	SSHRC	1	\$ 19,841
Operating	1	\$ 19,841	Other Provincial	1	\$ 47,138
Total	2	\$ 66,979	Total	2	\$ 66,979

Department of Industrial and Vocational Education

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Deane, A K				
	Education and Work in a Changing Society	OPR \$	3,100	SSHRC
Operating			1 \$ 3,100	SSHRC

Department of Secondary Education

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Kass, H				
	Collaborative Study with Connelly (Univ. of Toronto): Second International Science Study - Phase II: \$196,444	OPR		SSHRC

Faculty of Engineering

Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Conferences	1	\$ 5,000	NSERC	139	\$ 4,148,592
Contracts	36	\$ 1,993,604	Other Provincial	31	\$ 1,333,045
Equipment	6	\$ 300,462	Other Federal	14	\$ 826,395
Infrastructure	7	\$ 229,520	Other Agencies	12	\$ 301,140
Operating	143	\$ 3,936,406	Total	196	\$ 6,609,172
Technology Transfer	3	\$ 144,180			
Total	196	\$ 6,609,172			

Faculty of Engineering

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Dean				
	In Support of the Canadian Center for Arctic and Offshore Engineering Research	OPR \$	3,000	BVI
Operating			1 \$ 3,000	Other Agencies

Department of Chemical Engineering

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Chuang, K T				
	Research Involving a New Process for Controlling NOx Emissions	CTR \$	43,700	AECL
Dalla Lana, I G				
	Hydroprocessing of Coal-Derived Liquids	OPR \$	52,400	AENR
	Catalytic Hydrolysis of Carbon Disulfide	OPR \$	15,000	CGPA
	Co-investigator with Wanke, S E: Investigations of Catalytic Gas-Phase . . .			
	(1) Reactions, Rates, and Equilibrium in Acidgas Processing (2) Applications of IR Spectroscopy in Catalysis Research (3) Hydrodesulphurization of Model Compounds	OPR \$	31,430	NSERC
	Co-investigator with Wanke, S E: Optimal Chemical Routes for Heavy . . .			
Fisher, D G				
	Computer Control of Multivariable Processes	OPR \$	39,590	NSERC
	Applications of Artificial Intelligence in the Process Industries	OPR \$	30,000	NSERC
	Adaptive Process Control	OPR \$	51,030	NSERC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Gray, M R				
	Coal Research Grant Program - Functional Group Analysis of Coal Liquids	OPR \$	46,000	AENR
	Structural Characterization of Heavy Oil and Bitumen Upgrading Reactions	CTR \$	66,700	AOSTR
	Co-investigator with Wanke, S E: Investigations of Catalytic Gas-Phase . . .			
	Co-investigator with Westlake, D W (Science, Microbiology): Technical Support for Fermentation . . .			
	Co-investigator with Hrudey, S E (Civil Engineering): Role of Support Media in Enhancing . . .			
	Kinetics of Pyrolysis in Supercritical Water	OPR \$	15,590	NSERC
	Co-investigator with Wanke, S E: Optimal Chemical Routes for Heavy . . .			
Hayes, R E				
	Dispersion Effects in Porous Media	OPR \$	14,911	NSERC
Lynch, D T				
	Co-investigator with Wanke, S E: Investigations of Catalytic Gas-Phase . . .			
	Dynamic Behavior of Chemical and Catalytic Reactors	OPR \$	23,904	NSERC
Masliyah, J H				
	Co-investigator with Nandakumar, K: Enhancement of Gravity Separation . . .			
	Fluid-Particles Dynamics	OPR \$	35,000	NSERC
Mather, A E				
	Thermodynamic Properties of Fluids	OPR \$	22,176	NSERC
	Co-investigator with Otto, F D: Selective Gas Treating . . .			
Morris, A J				
	Real Time Computer Supervision and Control of Process Systems	OPR \$	17,600	NSERC
	Co-investigator with Fisher, D G: Adaptive Process Control . . .			
	Co-investigator with Fisher, D G: Applications of Artificial Intelligence . . .			
Nandakumar, K				
	Enhancement of Gravity Separation of Two-Species Suspensions	CTR \$	58,850	AOSTR
	Computer Aided Analysis of Chemical and Flow Processes	OPR \$	17,990	NSERC
Otto, F D				
	Gas Processing Technology/Gas-Liquid Operations	OPR \$	23,000	NSERC
	Selective Gas Treating	OPR \$	64,280	NSERC
Robinson, D B				
	The Phase Behavior and Properties of Selected Hydrocarbon - Non Hydrocarbon Mixtures, Particularly those Containing Carbon Dioxide, Methanol and/or Hydrogen Sulfide	OPR \$	40,608	NSERC
Seyer, F A				
	Analysis of Transport Phenomena in Bitumen/Heavy Oil Recovery Processes	CTR \$	30,560	AOSTR
Shah, S L				
	Robustness Issues in Adaptive Control	OPR \$	22,500	NSERC
Wanke, S E				
	Investigations of Catalytic Gas-Phase Polymerization of Ethylene	CTR \$	70,000	NCOR
	Co-investigator with Egerton, R F (Science, Physics): Transmission Electron Microscope . . .			
	Optimal Chemical Routes for Heavy Oil Upgrading	OPR \$	71,120	NSERC
	Characterization and Activity of Supported Metal Catalysts	OPR \$	36,384	NSERC
Wood, R K				
	Dynamics and Control of Process Systems	OPR \$	18,470	NSERC

Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	5	\$ 269,810	NSERC	18	\$ 575,583
Operating	21	\$ 688,983	Other Provincial	5	\$ 254,510
Total	26	\$ 958,793	Other Federal	1	\$ 43,700
			Other Agencies	2	\$ 85,000
			Total	26	\$ 958,793

Department of Civil Engineering

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Anderson, K O				
	Characteristics of Recycled Asphalt Concrete Materials	CTR \$	12,076	AT
	Evaluation of Pavements with Relatively Low Incidence of Thermal Cracking	CTR \$	1,300	AT
	Influence of Asphalt Cement Properties on Construction in Alberta	CTR \$	3,300	AT
	Evaluation of Asphalt Cements for Low Temperature Performance	OPR \$	8,000	IOL
	Recycling of Asphalt Pavements	OPR \$	11,520	NSERC
Bouthillier, P H				
	Co-investigator with Hrudey, S E: Environmental Process BioTechnology . . .			

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Chan, D H				
	Co-investigator with Kaiser, P K: Numerical Simulation of Room 209 . . .			
	Co-investigator with Morgenstern, N R: Coal Research Grant Program - Deformation . . .			
	Finite Element Analysis of Strain Softening Soil and Shear Band Deformation	OPR	\$ 12,000	NSERC
Cheng, J J R				
	Lateral and Local Instability of Coped Beams	OPR	\$ 11,520	NSERC
Cruden, D M				
	A Landslide Overview Map of Alberta	CTR	\$ 10,000	AE
	Geotechnical Characterization of Materials in Slope Movements in the Cordillera	OPR	\$ 8,000	EMRC
Eisenstein, Z				
	(1) Underground Openings in Soft Ground. (2) Tunnels and Shafts in Oil Sands. (3) Effective Stresses Around Excavations.	OPR	\$ 39,000	NSERC
Elwi, A E				
	(1) Theoretical and Experimental Investigation of Bin Loads (2) Investigation of Self-limiting Behaviour of Secondary Containments	OPR	\$ 12,480	NSERC
Gerard, R				
	Hydrometeorological Conditions Conducive to Ice Jam Formation	OPR	\$ 5,000	EC
	Hay River Ice Jam Flood Study	CTR	\$ 60,000	EC
	River, Lake and Offshore Ice Processes	OPR	\$ 19,200	NSERC
Hatzinikolas, M				
	Research in Masonry Veneer Walls	OPR	\$ 12,000	NSERC
Hrudey, S E				
	Fish Tainting Potential of Oil Sands Wastewaters	CTR	\$ 13,000	AE
	Coal Research Grant Program - Coal Conversion Wastewater Treatment Technology	OPR	\$ 30,000	AENR
	Anaerobic Biological Degradation of Hazardous Organic Chemicals	OPR	\$ 22,000	AERT
	Hazardous Waste Management and Risk Assessment	OPR	\$ 33,500	NSERC
	Role of Support Media in Enhancing Anaerobic Biotreatment of Phenolics	OPR	\$ 46,200	NSERC
	Environmental Process BioTechnology Laboratory	INF	\$ 57,600	NSERC
	Co-investigator with Crawford, R J (Science, Chemistry): Mass Spectrometry Service Laboratory . . .			
Huck, P M				
	Evaluation of Alternative Drinking Water Treatment Processes at Pilot Scale by Means of Mutagenicity Testing	CTR	\$ 132,380	AWWA
	Evaluation of Alternative Drinking Water Processes at Pilot Scale by Means of Mutagenicity Testing	OPR	\$ 19,387	CE
	A Study using Computer Software to Model the Performance of Carbon Absorbers in a Large Canadian Drinking Water Treatment Plant	CTR	\$ 47,455	HWC
	Continuation of Study Entitled: Chemical and Biological Evaluation of Drinking Water Treatment Alternatives	CTR	\$ 18,295	HWC
	Use of Biological Processes in Drinking Water Treatment	CTR	\$ 59,000	NRC
	Removal of Organics from Drinking Water	OPR	\$ 24,000	NSERC
	Co-investigator with Hrudey, S E: Environmental Process BioTechnology . . .			
	Development of a New Process for Removal of Radium-226 from Uranium Tailings Decants	TTR	\$ 79,600	NSERC
	Co-investigator with Crawford, R J (Science, Chemistry): Mass Spectrometry Service Laboratory . . .			
Hunt, J D				
	Urban Travel Behavior Modelling	OPR	\$ 15,000	NSERC
Kaiser, P K				
	Numerical Simulation of Room 209 Instrument Ring	CTR	\$ 38,260	AECL
	Deep Borehole Rupture Mechanics	OPR	\$ 70,000	NSERC
	Rupture Mechanisms of Underground Openings	OPR	\$ 17,280	NSERC
Kennedy, D J L				
	Transversely Loaded Clamped Steel Plates. Composite Steel-Concrete Trusses	OPR	\$ 37,000	NSERC
Knettig, E				
	Co-investigator with Hrudey, S E: Environmental Process BioTechnology . . .			
Kulak, G L				
	Large-diameter Tubes Loaded in Shear or in Combined Shear and Bending	OPR	\$ 30,720	NSERC
Longworth, J				
	Behavior of Masonry Structures	OPR	\$ 11,520	NSERC
MacGregor, J G				
	Strength and Stability of Reinforced Concrete Structures	OPR	\$ 62,400	NSERC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Morgenstern, N R				
	Coal Research Grant Program - Deformation and Progressive Failure of Open Pit Mine Highwall	OPR \$	59,514	AENR
	Co-investigator with Scott, J D: Geotechnical and Thermal Testing . . .			
	Geotechnical Behaviour of Permafrost, Oil Sands and Other Natural Materials	OPR \$	92,160	NSERC
	Geotechnical Laboratories - University of Alberta	INF \$	21,120	NSERC
Murray, D W	Prediction of Structural Behaviour	OPR \$	26,000	NSERC
Peterson, A E	Survey Positioning by GPS (Interferometric Method)	OPR \$	14,400	NSERC
Peterson, A W	Co-investigator with Steffler, P M: Flow and Shear Stress in Curved . . .			
	Channels Formed in Sediment	OPR \$	18,528	NSERC
Rajaratnam, N	Co-investigator with Steffler, P M: Flow and Shear Stress in Curved . . .			
	Hydraulics of Effluent Discharges into Lakes and Rivers, Hydraulics of Fishways, LDA Measurements and Numerical Simulations in Hydraulics	OPR \$	43,104	NSERC
Scanlon, A	Serviceability of Concrete Structures	OPR \$	18,000	NSERC
Scott, J D	Geotechnical and Thermal Testing of Oil Sands	CTR \$	145,284	AOSTR
	Forestburg Reclamation Study, Settlement Behaviour of Mine Backfill	CTR \$	8,121	ARC
	Devon Geogrid Test Fill	CTR \$	98,946	AT
	Influence of Asphalt Cement Properties on Construction in Alberta	CTR \$	3,300	AT
	Development of Test Procedure and Material Properties for Evaluating Geogrids for Soil Reinforcement	CTR \$	33,495	AT
	Characteristics of Recycled Asphalt Concrete Materials	CTR \$	12,076	AT
	Evaluation of Pavements with Relatively Low Incidence of Thermal Cracking	CTR \$	1,300	AT
	Design Methodology for Geogrid Reinforced Soil Slopes	CTR \$	11,830	AT
	Strength - Deformation Properties of Soil-Fabric Systems Gas Exsolution Influence on Foundations on Oil Sand	OPR \$	24,000	NSERC
	Core Sampler for Oil Sands and Heavy Oil Formations	OPR \$	77,680	NSERC
	Co-investigator with Kaiser, P K: Deep Borehole Rupture Mechanics . . .			
Sego, D C	Strength and Deformation Behavior of Frozen and Unfrozen Soil	OPR \$	13,000	NSERC
	Instrumentation of CNR Sheetpile Wall, Boston Bar, B C	TTR \$	2,380	NSERC
Simmonds, S H	(1) Shell Structures (2) Reinforced Concrete Slabs	OPR \$	23,040	NSERC
Smith, D W	Ozone Disinfection of Wastewater	OPR \$	15,000	AERT
	Powdered Activated Carbon Study	OPR \$	10,000	CE
	A Study of Ozonation at Canadian Water Treatment Plants	CTR \$	14,426	CEA
	Disinfection of Wastewater using Ozone	OPR \$	30,720	NSERC
	Co-investigator with Hrudey, S E: Environmental Process BioTechnology . . .			
Steffler, P M	Flow and Shear Stress in Curved Channels	CTR \$	25,000	AE
	Turbulent Flow in Open Channels and Rivers	OPR \$	16,320	NSERC
Teply, S	Capacity Related Transportation Characteristics of Canadian Communities	OPR \$	23,040	NSERC
Thomson, S	Co-investigator with Cruden, D M: A Landslide Overview Map of Alberta . . .			
	Co-investigator with Morgenstern, N R: Coal Research Grant Program - Deformation . . .			
	Engineering Characteristics and Behaviour of Stiff Clay (Till) and Soft Rocks and their Application to Engineering Projects	OPR \$	19,200	NSERC
Warwaruk, J	Research in Prestressed Concrete Masonry	OPR \$	16,000	NSERC

Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	21	\$ 748,844	NSERC	36	\$ 1,081,232
Infrastructure	2	\$ 78,720	Other Provincial	18	\$ 505,542
Operating	41	\$ 1,097,433	Other Federal	7	\$ 236,010
Technology Transfer	2	\$ 81,980	Other Agencies	5	\$ 184,193
Total	66	\$ 2,006,977	Total	66	\$ 2,006,977

Department of Electrical Engineering

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Baltes, H P				
	Spectrophotometer and Microcomputer for Sensor Laboratory	EQP \$	68,523	NSERC
	Microelectronic Sensor Modeling and Application	OPR \$	37,248	NSERC
	Organic Film Preparation for Integrated Sensors in Silicon	EQP \$	60,012	NSERC
	Integrated Sensors on Silicon	OPR \$	60,000	NSERC
Bollinger, K E				
	Power System Control	OPR \$	20,256	NSERC
Brett, M J				
	Thin Films for Sensor Applications	OPR \$	22,000	NSERC
	Co-investigator with Baltes, H P: Spectrophotometer and Microcomputer . . .			
	Co-investigator with Baltes, H P: Integrated Sensors on Silicon . . .			
	Co-investigator with Baltes, H P: Organic Film Preparation for Integrated . . .			
Capjack, C E				
	Computer Simulation Codes for Laser-Plasma Applications	OPR \$	21,120	NSERC
	Co-investigator with Seguin, H J J: High Power Magpie Laser with Plasma . . .			
	Co-investigator with Offenberger, A A: KrF Laser Facility . . .			
	Co-investigator with Seguin, H J J: High Power Laser Discharge Stabilization . . .			
	The Development and Use of Magnetohydrodynamic Computer Simulation Codes for Supporting Laser-Plasma Interaction Experiments Designed to Establish the Feasibility of Laser Driven Inertial Fusion.	OPR \$	44,900	NSERC
Cervenak, M R				
	Mode of Stabilization of a Multikilowatt C.W. CO2 Laser	OPR \$	19,200	NSERC
	Co-investigator with Seguin, H J J: High Power Laser Discharge Stabilization . . .			
Cheng, Z				
	Co-investigator with Seguin, H J J: High Power Laser Discharge Stabilization . . .			
	Co-investigator with Seguin, H J J: High Power Magpie Laser with Plasma . . .			
Christensen, G S				
	Optimization Methods Applied to Power Systems	OPR \$	25,728	NSERC
Chute, F S				
	Electromagnetic Heating of Oil Sands	CTR \$	90,740	AOSTR
	Electromagnetic Techniques in the in-situ Recovery of Hydrocarbon Materials	OPR \$	29,568	NSERC
Durdle, N G				
	Studies of Electrical and Mechanical Properties of the Gastrointestinal Tract.	OPR \$	7,000	NSERC
Englefield, C G				
	Optical Fibre Communication Systems	OPR \$	11,904	NSERC
Fedosejevs, R				
	Co-investigator with Offenberger, A A: KrF Laser Facility . . .			
	Co-investigator with Offenberger, A A: Laser Fusion Related Research . . .			
	UV Laser-Plasma Interactions	OPR \$	28,800	NSERC
	Narrow Linewidth Argon Ion Laser	EQP \$	53,497	NSERC
Filanovsky, I				
	Circuit Techniques for Integrated Solid State Sensors	OPR \$	17,280	NSERC
Girczyc, E F				
	Smodules: An Object Oriented IC Design Environment	OPR \$	16,000	NSERC
Goud, P A				
	Coding and Modulation for Optical Fiber Communications	OPR \$	16,700	NSERC
Gourishankar, V G				
	Co-investigator with Rink, R E: Optimized Microprocessor Control . . .			
	(1) Minimum Sensitivity Controller Design (2) System Identification	OPR \$	17,184	NSERC
James, C R				
	Laser-Plasma Interaction Processes	OPR \$	19,200	NSERC
Joerg, W B				
	Interactive Framework for an Integrated (VLSI) Design Environment	OPR \$	21,216	NSERC
Kingma, Y J				
	Co-investigator with Bowes, K L (Medicine, Surgery and Clinical Surgery): G I Motility Studies . . .			
	Electrical and Mechanical Activity of the Digestive Tract: Modeling, Instrumentation and Analysis. Robotic Aids for Quadriplegics	OPR \$	16,800	NSERC
Koval, D O				
	Reliability of Commercial and Industrial Processes	OPR \$	9,523	NSERC
Landecker, T L				
	Radio Astronomy Instrumentation Development and Supernova Remnant Research	OPR \$	14,100	NSERC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Lawson, R P W	Ion Beam Deposition of Binary Alloys/Ion Implantation	OPR \$	11,616	NSERC
	Co-investigator with Egerton, R F (Science, Physics): Transmission Electron Microscope . . .			
Marchand, R	Co-investigator with Offenberger, A A: KrF Laser Facility . . .			
	Modelling of Laser-Plasma Interactions	OPR \$	12,230	NSERC
	Co-investigator with Capjack, C E: The Development and Use of Magnetohydrodynamic . . .			
McMullin, J N	Improvement in Coupling of Semiconductor Lasers to Single Mode Fibers	OPR \$	13,248	NSERC
Merchant, V	Co-investigator with Seguin, H J J: High Power Laser Discharge Stabilization . . .			
Mowchenko, J T	Placement and Routing Algorithms for Cell-based Integrated Circuit Design	OPR \$	14,784	NSERC
Nikumb, N	Co-investigator with Seguin, H J J: High Power Laser Discharge Stabilization . . .			
	Co-investigator with Seguin, H J J: High Power Magpie Laser with Plasma . . .			
Offenberger, A A	High Intensity Laser/Plasma Interactions	OPR \$	86,400	NSERC
	Laser Fusion Related Research	OPR \$	140,000	NSERC
	Co-investigator with Fedosejevs, R: Narrow Linewidth Argon Ion Laser . . .			
	KrF Laser Facility	INF \$	67,800	NSERC
Rink, R E	Optimized Microprocessor Control of Heat Pump/Heat Storage Systems	OPR \$	10,000	EMRC
	Information Processing in Feedback Control	OPR \$	11,232	NSERC
Ristic, L	Silicon Sensor Technology	OPR \$	18,700	NSERC
	Co-investigator with Baltes, H P: Integrated Sensors on Silicon . . .			
Robinson, A M	Absorption in CO2 at Elevated Temperatures and Pressures	OPR \$	17,800	NSERC
Robinson, S	Co-investigator with Seguin, H J J: High Power Laser Discharge Stabilization . . .			
Routledge, D	Radio Synthesis Mapping of Supernova Remnants, and Development of Low-noise Receivers	OPR \$	13,920	NSERC
	Co-investigator with Vaneldik, J F: Low-Noise Microwave Amplifier Development . . .			
Schmidt-Weinmar, H G	Electro-Optics of Silicon-Germanium Superlattices	OPR \$	12,900	NSERC
Seguin, H J J	High Powered Laser Technology and Laser Materials Science and Processing	OPR \$	66,816	NSERC
	High Power Magpie Laser with Plasma Electrodes Development System	EQP \$	55,000	NSERC
	High Power Laser Discharge Stabilization with Magnetic Fields	OPR \$	60,000	NSERC
	Engineering - Laser Materials	INF \$	10,000	NSERC
Smy, P R	Research in Circuit Breakers and Combustion Physics	OPR \$	52,954	NSERC
	The Use of Electrically Induced Turbulence in Combustion	OPR \$	57,000	NSERC
	Co-investigator with Seguin, H J J: High Power Laser Discharge Stabilization . . .			
Tulip, J	Laser Applications and Engineering Research Institute Limited	CTR \$	300,000	DRIE
	Endoscopic Laser Systems	OPR \$	75,000	NSERC
	High Powered Lasers, Medical Application	OPR \$	46,656	NSERC
	High Powered Waveguide CO2 Laser	OPR \$	65,000	NSERC
	Medical Laser Facility	INF \$	28,800	NSERC
Vaneldik, J F	Cryogenic GaAsFet Radio Astronomy Amplifiers, New Type of Correlation Receiver, Mapping of Several Supernova Remnants	OPR \$	17,280	NSERC
	Low-Noise Microwave Amplifier Development Laboratory	INF \$	34,700	NSERC
Vermeulen, F E	Co-investigator with Chute, F S: Electromagnetic Heating of Oil . . .			
	Use of Electromagnetic Heating for the In-situ Recovery of Fossil Fuels	OPR \$	30,432	NSERC
Voss, W A G	Microwave Power and Instrumentation	OPR \$	27,168	NSERC

Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	2	\$ 390,740	NSERC	50	\$ 1,705,195
Equipment	4	\$ 237,032	Other Provincial	1	\$ 90,740
Infrastructure	4	\$ 141,300	Other Federal	2	\$ 310,000
Operating	43	\$ 1,336,863	Total	53	\$ 2,105,935
Total	53	\$ 2,105,935			

Department of Mechanical Engineering

Investigator	Project Title	Award	Amount	Agency
Athienitis, A K				
	Development of Detailed and Flexible Software for Building Energy Analysis and Systematic Optimization Studies	OPR	\$ 9,600	EMRC
	Efficient and Accurate Modelling of Passive Solar Buildings - Room Interior Radiation Exchanges and Night Insulation	OPR	\$ 10,160	NSERC
Bellow, D G				
	Static and Dynamic Behavior of Machine Elements	OPR	\$ 21,190	NSERC
	Electrochemical Corrosion Measurement System - Potentiostat	EQP	\$ 16,600	NSERC
	To Investigate Methods of Reducing Costs and Improving Quality in the Production of Steel Products at the Edmonton Steel Works Plant	CTR	\$ 9,867	STEL
Budney, D R				
	Co-investigator with Moreau, M J (Medicine, Medicine and Clinical Medicine): Experimental Evaluation of Spinal . . .			
	Reinforced Openings/Fracture Mechanics	OPR	\$ 11,940	NSERC
Checkel, M D				
	Turbulence - Combustion Interaction for Spark Ignition Engines	OPR	\$ 14,680	NSERC
	Co-investigator with Wilson, D J: Laser Light Sheet Flow Visualization . . .			
Cheng, K C				
	Studies of Cold Regions and Convective Heat Transfer Problems	OPR	\$ 37,350	NSERC
Colbourne, J R				
	Gear Geometry and Tooth Strength	OPR	\$ 17,682	NSERC
Craggs, A				
	Co-investigator with Faulkner, M G: Mechanical Engineering Acoustics . . .			
	Finite Element Acoustics	OPR	\$ 21,080	NSERC
Dale, J D				
	Co-investigator with Wilson, D J: Laser Light Sheet Flow Visualization . . .			
	Combustion Ignition Studies and Spark Ignition Engine Performance	OPR	\$ 21,596	NSERC
Ellyin, F				
	Materials Response and Reliability of Components under Various States of Stress and Environments	OPR	\$ 46,560	NSERC
Faulkner, M G				
	Mechanics of Dental Problems/Acoustical Testing Techniques	OPR	\$ 21,080	NSERC
	International Symposium on Cold Regions Heat Transfer, University of Alberta, Edmonton, Alberta, June 4-7, 1987.	CFC	\$ 5,000	NSERC
	Mechanical Engineering Acoustics and Noise Unit	INF	\$ 9,500	NSERC
	A Study of the Fuel Efficiencies of a Small Engine with and without a Low Friction Coating	CTR	\$ 1,080	SRMP
Forest, T W				
	Phase Changes in Liquids	OPR	\$ 15,552	NSERC
	Co-investigator with Wilson, D J: Laser Light Sheet Flow Visualization . . .			
Gates, E M				
	Marine Icing	OPR	\$ 85,500	NSERC
	Modelling of Atmospheric Icing of Structures	OPR	\$ 14,680	NSERC
	A Waterjet Evacuation Tool	TTR	\$ 62,200	NSERC
Haddow, J B				
	Studies in Non-linear Wave Propagation	OPR	\$ 22,240	NSERC
Kennedy, J S				
	Elastohydrodynamic Lubrication of Soft Materials. Blood Flow to the Kidneys.	OPR	\$ 9,710	NSERC
Lipsett, A W				
	Dynamic Response of Offshore Structures in Waves and Currents	OPR	\$ 14,910	NSERC
	Co-investigator with Wilson, D J: Laser Light Sheet Flow Visualization . . .			
Lock, G S H				
	Heat Losses through Uninsulated Wall Spaces	OPR	\$ 9,400	AHPW
	Development of Carnot Engine for Northern Application	OPR	\$ 8,600	EMRC
	(1) Heat Transfer Near Partially Submerged/Buried Tubes. (2) Convective Eversion	OPR	\$ 15,120	NSERC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Mioduchowski, A	Vibrations of Elastic Elements and Media	OPR \$	18,555	NSERC	
Rodkiewicz, C M	Arterial Blood Flow: Lubrication	OPR \$	29,090	NSERC	
Simms, B W	Information Processing Model of Technical Organizations	OPR \$	9,600	NSERC	
Toogood, R W	Industrial Robotics - Dynamic Simulation and Motion Planning	OPR \$	12,457	NSERC	
Varty, R L	Application of Laser-Doppler Anemometry to Fluid Mechanics	OPR \$	10,278	NSERC	
Vitovec, F H	Co-investigator with Bellow, D G: Electrochemical Corrosion Measurement . . .				
Wilson, D J	Predicting Exposure Hazards from Toxic Gas Releases	OPR \$	35,800	ACOH	
	Atmospheric Pollution Dispersion, Turbulent Mixing, Air Infiltration into Buildings	OPR \$	30,882	NSERC	
	Laser Light Sheet Flow Visualization System	EQP \$	46,830	NSERC	
Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	1	\$ 5,000	NSERC	28	\$ 652,022
Contracts	2	\$ 10,947	Other Provincial	2	\$ 45,200
Equipment	2	\$ 63,430	Other Federal	2	\$ 18,200
Infrastructure	1	\$ 9,500	Other Agencies	2	\$ 10,947
Operating	27	\$ 575,292	Total	34	\$ 726,369
Technology Transfer	1	\$ 62,200			
Total	34	\$ 726,369			

Department of Mining, Metallurgical and Petroleum Engineering

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Barron, K	Design Criteria for Pillars in Coal Mines	OPR	\$ 18,528	NSERC	
Bentsen, R G	Analysis of the Displacement of One Fluid by Another	OPR	\$ 18,000	NSERC	
Berkowitz, N	Supercritical Gas Extraction of Coal in H-Donor Systems	OPR	\$ 82,275	AENR	
	Generation of Synthetic Liquid Hydrocarbons from Coal	OPR	\$ 31,192	NSERC	
Etsell, T H	Ceramic Electrolytes and Metal Extraction from Fly Ash	OPR	\$ 18,000	NSERC	
	Co-investigator with Scarfe, C M (Science, Geology): High-pressure Apparatus for Research . . .				
Farouq Ali, S M	Scaled Model Studies of the Immiscible Carbon Dioxide Flooding Process	CTR	\$ 102,890	AOSTR	
	Mobility Control	CTR	\$ 126,040	AOSTR	
	Formation and Flow of Emulsions in Porous Media at Elevated Temperatures	CTR	\$ 83,800	AOSTR	
	Realistic Simulation of Formation Fracturing During Steam Injection Operations and Performance Prediction	CTR	\$ 42,048	AOSTR	
	Steam Injection Experiments in a Scaled Physical Model - Phase II	CTR	\$ 158,970	EMRC	
	Steam-Foam Drive Process for Oil Recovery from Marginal Reservoirs	OPR	\$ 19,750	NSERC	
	Experimental Simulation of a Horizontal Well for Heavy Oil Recovery	OPR	\$ 8,000	PAE	
Flintoff, B C	Froth Flotation of Fine Metallurgical Coal	OPR	\$ 15,590	NSERC	
Patchett, B M	Narrow Gap Welding of High-Strength Marine Steels and Stainless Steel Overlay Disbonding Assessment	CTR	\$ 59,515	EMRC	
	Physical Behavior of Submerged Arc Welding Fluxes	OPR	\$ 13,500	NSERC	
	Mechanical Properties of Narrow Gap GMAW Joints in C-Mn Pressure Vessel Steels	OPR	\$ 10,000	WRC	
Wayman, M L	Co-investigator with Egerton, R F (Science, Physics): Transmission Electron Microscope . . .				
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Contracts	6	\$ 573,263	NSERC	7	\$ 134,560
Operating	10	\$ 234,835	Other Provincial	5	\$ 437,053
Total	16	\$ 808,098	Other Federal	2	\$ 218,485
			Other Agencies	2	\$ 18,000
			Total	16	\$ 808,098

Faculty of Extension

Type of Award	No.	Amount	Source of Funds	No.	Amount
Infrastructure	1	\$ 4,000	Other Agencies	1	\$ 4,000
Total	1	\$ 4,000	Total	1	\$ 4,000

Faculty of Extension

Investigator	Project Title	Award	Amount	Agency
Bray, C	Title Word Index - Canadian Women's Periodicals	INF	\$ 4,000	CRIAW

Faculty of Home Economics

Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	1	\$ 20,643	NSERC	6	\$ 282,862
Equipment	1	\$ 31,066	SSHRC	1	\$ 36,483
Operating	14	\$ 499,021	Other Provincial	5	\$ 146,200
Total	16	\$ 550,730	Other Federal	1	\$ 20,643
			Other Agencies	3	\$ 64,542
			Total	16	\$ 550,730

Department of Clothing and Textiles

Investigator	Project Title	Award	Amount	Agency
Crown, E M	Systematic Assessment of Protective Clothing for Alberta Workers	OPR	\$ 50,000	ACOH
	Co-investigator with Kerr, N: Limiting Pesticide Exposure through . . .			
	Effect of Construction and Design on Fire Hazards Associated with Children's Sleepware	CTR	\$ 20,643	CCAC
Kernaleguen, A	Video Cassettes on Clothing for Persons with Special Needs	OPR	\$ 16,500	WRFN
Kerr, N	Limiting Pesticide Exposure through Textile Cleaning Procedures and Selection of Clothing	OPR	\$ 41,000	ARCA
Richards, E A	Co-investigator with Scott, J D (Engineering, Civil Engineering): Devon Geogrid Test Fill . . .			
	Co-investigator with Scott, J D (Engineering, Civil Engineering): Design Methodology for Geogrid . . .			
	Co-investigator with Scott, J D (Engineering, Civil Engineering): Development of Test Procedure and . . .			
Rigakis, K B	Co-investigator with Crown, E M: Systematic Assessment of Protective . . .			
	Co-investigator with Kerr, N: Limiting Pesticide Exposure through . . .			

Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	1	\$ 20,643	Other Provincial	3	\$ 107,500
Operating	3	\$ 107,500	Other Federal	1	\$ 20,643
Total	4	\$ 128,143	Total	4	\$ 128,143

Department of Family Studies

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Hurlbut, N L	Co-investigator with Kieren, D K: Problem Solving Phasing in Families . . .				
Kieren, D K	Problem Solving Phasing in Families With an Adolescent Diabetic	OPR	\$ 36,483	SSHRC	
Morrison, F J	Understanding Reading Disability: A Reconceptualization	OPR	\$ 18,700	AMHAC	
	Word Learning in Reading Disabled Children	OPR	\$ 22,856	NSERC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Operating	3	\$ 78,039	NSERC	1	\$ 22,856
			SSHRC	1	\$ 36,483
			Other Provincial	1	\$ 18,700
			Total	3	\$ 78,039

Department of Foods and Nutrition

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Basu, T K					
	Dental, Dietary and Nutritional Survey of a Group of Elderly People in Edmonton	OPR	\$ 12,142	KSC	
Clandinin, M T					
	Modulation of Adipocyte Insulin Receptor Functions Changes in Diet Fat Composition	OPR	\$ 45,600	CDA	
	Co-investigator with Thomson, A B R (Medicine, Medicine and Clinical Medicine): Critical Period Programming . . .				
	Modulation of Membrane Structure and Function by Diet Fat	OPR	\$ 58,500	NSERC	
	Bellows Assembly for Existing Isotope Ratio Mass Spectrometer	EQP	\$ 31,066	NSERC	
	Demonstration of the in-vivo Significance of Diet Induced Alterations in Membrane Structure and Function in Man	OPR	\$ 114,000	NSERC	
Field, C J					
	Co-investigator with Clandinin, M T: Modulation of Adipocyte Insulin . . .				
Hawrysh, Z J					
	Quality Evaluation of Canola Oils and Canola Oil Products	OPR	\$ 20,000	ARCA	
	Development of a Gluten-free Rice Flour Yeast Bread using Response Surface Methodology	OPR	\$ 6,800	MSI	
	Studies of Canola Oil Stability	OPR	\$ 38,200	NSERC	
Johnston, J L					
	The Effects of Dietary Tyrosine, Protein and Sodium on Central and Peripheral Sympathetic Activity in Lean Mice	OPR	\$ 18,240	NSERC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Equipment	1	\$ 31,066	NSERC	5	\$ 260,006
Operating	8	\$ 313,482	Other Provincial	1	\$ 20,000
Total	9	\$ 344,548	Other Agencies	3	\$ 64,542
			Total	9	\$ 344,548

Faculty of Law

Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Infrastructure	4	\$ 115,943	Other Agencies	4	\$ 115,943
Total	4	\$ 115,943	Total	4	\$ 115,943

Faculty of Law

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Christian, T J				
	Co-investigator with Lown, P J M: Communications and Labour Law Database . . .			
	Charter of Rights Database	INF \$	32,150	ALF
Elman, B P				
	Co-investigator with Christian, T J: Charter of Rights Database . . .			
Lown, P J M				
	Communications and Labour Law Database	INF \$	12,924	ALF
MacPherson, L V				
	Alberta Case Locator Database	INF \$	28,357	ALF
McLellan, A A				
	Co-investigator with Christian, T J: Charter of Rights Database . . .			
Picard, E I				
	Health Law Database (through Health Law Institute)	INF \$	42,512	ALF

Faculty of Library Science

<i>Type of Award</i>	<i>No.</i>	<i>Amount</i>	<i>Source of Funds</i>	<i>No.</i>	<i>Amount</i>
Operating	3	\$ 24,773	SSHRC	1	\$ 14,673
Total	3	\$ 24,773	Other Provincial	1	\$ 9,200
			Other Agencies	1	\$ 900
			Total	3	\$ 24,773

Faculty of Library Science

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Schrader, A M				
	Challenges to Intellectual Freedom in Canadian Public Libraries	OPR \$	9,200	AFLA
	An Investigation of the Availability of Information on World Peace and Nuclear Disarmament in Canadian Public Libraries	OPR \$	900	CDLA
Strathern, G M				
	Canadian Studies - Research Tools Program: Alberta Newspapers 1880-1982: A Guide	OPR \$	14,673	SSHRC

Faculty of Medicine

<i>Type of Award</i>	<i>No.</i>	<i>Amount</i>	<i>Source of Funds</i>	<i>No.</i>	<i>Amount</i>
Conferences	7	\$ 90,381	AHFMR	30	\$ 3,589,114
Contracts	13	\$ 636,424	MRC	84	\$ 5,816,349
Equipment	4	\$ 144,615	NSERC	5	\$ 136,042
Infrastructure	2	\$ 177,835	SSHRC	1	\$ 16,030
Operating	192	\$ 13,284,500	Other Provincial	32	\$ 1,753,315
Technology Transfer	2	\$ 55,000	Other Federal	6	\$ 145,887
Total	220	\$ 14,388,756	Other Agencies	62	\$ 2,932,018
			Total	220	\$ 14,388,756

Faculty of Medicine

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Dean					
	Development of a Medical Design Centre & Workshop - Service Function for the Heritage Bldg, Heritage Funded Individuals Faculty of Medicine, Other Investigators Involved in Medical Research incl. the University of Calgary	INF	\$ 45,000	AHFMR	
	General Research Grant to the Dean for the Support of Research in the Faculty of Medicine	OPR	\$ 45,000	MRC	
Type of Award	No.	Amount	Source of Funds	No.	Amount
Infrastructure	1	\$ 45,000	AHFMR	1	\$ 45,000
Operating	1	\$ 45,000	MRC	1	\$ 45,000
Total	2	\$ 90,000	Total	2	\$ 90,000

Department of Anatomy

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Bagnall, K M					
	Tissue Morphogenesis and Pathways for Cell Migration as Evidenced by Somitic Involvement in Vertebral Development	OPR	\$ 4,320	NSERC	
Krukoff, T L					
	Neuropeptides and Cardiovascular Regulation	OPR	\$ 39,629	MRC	
MacPherson, B R					
	Colonic Mucus in Inflammation and Carcinogenesis	OPR	\$ 30,277	ACB	
Milos, N C					
	Intrinsic Cellular Factors and Their Roles in Pattern Formation by Neural Crest Cells	OPR	\$ 43,692	MRC	
Murphy, R A					
	Nerve Growth Factor: Analysis in Iris	OPR	\$ 383,000	AHFMR	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Operating	5	\$ 500,918	AHFMR	1	\$ 383,000
			MRC	2	\$ 83,321
			NSERC	1	\$ 4,320
			Other Provincial	1	\$ 30,277
			Total	5	\$ 500,918

Department of Applied Sciences in Medicine

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Hangartner, T N				
	Co-investigator with Weir, B (Surgery and Clinical Surgery): Studies on the Prevention of Chronic . . .			
	Co-investigator with Overton, T R: A Clinical Trial of Skeletal Activation . . .			
Overton, T R				
	Co-investigator with Weir, B (Surgery and Clinical Surgery): Studies on the Prevention of Chronic . . .			
	A Clinical Trial of Skeletal Activation in Healthy Postmenopausal Women	OPR \$	60,263	MRC
Snyder, R E				
	The Study of Axonal Transport Using a Multiple Proportional Counter	OPR \$	37,315	MRC
Operating		MRC	2 \$	97,578

Department of Biochemistry

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Anderson, W F				
	Co-investigator with Kay, C M: Group in Protein Structure and . . .			
Bleackley, R C				
	Co-investigator with Paetkau, V H: Cancer Immunotherapy . . .			
	Co-investigator with Paetkau, V H: Structure and Expression of Genome . . .			
	T Lymphocyte Activation - A Molecular Study	OPR \$	87,475	NCI
	Cloning of Lymphocyte Toxin Genes	CTR \$	19,500	SERAG

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Bridger, W A	Heart Mitochondrial Protein Transport	OPR \$	38,900	CHF
	Enzyme Structure and Assembly	OPR \$	108,350	MRC
Brox, L W	Co-investigator with Henderson, J F (J S McEachern Laboratory): Purine Nucleoside and Nucleotide . . .			
Cass, C E	Co-investigator with Paterson, A R P (J S McEachern Laboratory): Transport of Nucleosides . . .			
Colter, J S	To Be Used for the Support of Medical Research in the Laboratory of J S Colter	OPR \$	30,000	AHFMR
	Investigations of Cell-Virus Interactions	OPR \$	18,780	MRC
Hodges, R S	Feasibility of forming Alberta Pharmaceuticals for the Production, Formulation & Manufacture of Synthetic Peptides & Related Products	TTR \$	30,000	AHFMR
	Regulation of Cardiac Muscle Contraction	OPR \$	34,000	CHF
	Maintenance and Equipment Grant for Alberta Peptide Institute	OPR \$	82,750	MRC
	Co-investigator with Kay, C M: Group in Protein Structure and . . .			
	Peptide Vaccine Delivery	CTR \$	10,530	UT
James, M N G	Co-investigator with Kay, C M: Group in Protein Structure and . . .			
Kaplan, J G	Biochemical and Cytochemical Analysis of Nuclear Activation in Stimulated Lymphocytes	OPR \$	79,425	MRC
	Mechanism of the Proliferative Activation of Lymphocytes	OPR \$	53,472	NSERC
Kay, C M	Physico-Chemical, Chemical and Biological Studies on Cardiac Troponin C and Troponin T	OPR \$	30,000	CHF
	Group in Protein Structure and Function	OPR \$	1,401,362	MRC
Madsen, N B	Structure-Function Relationships and Regulation of Enzymes Associated with Glycogen Metabolism	OPR \$	147,750	MRC
McElhaney, R N	The Roles of Lipids in Biomembrane Structure and Function	OPR \$	106,498	MRC
McFadden, G	Transforming Growth Factor Activities in Poxvirus-infected Cells	OPR \$	44,563	ACB
	Replication and Resolution of Cloned Poxvirus Telomeres	OPR \$	36,750	MRC
	Replication of Poxvirus Telomeres	OPR \$	11,672	MRC
	Shope Fibroma Virus	OPR \$	49,392	NCI
Morgan, A R	DNA Repair	OPR \$	32,539	ACB
	DNA Replication, Recombination, Repair	OPR \$	60,578	MRC
Paetkau, V H	Cancer Immunotherapy	OPR \$	81,540	ACB
	Structure and Expression of Genome DNA	OPR \$	82,491	MRC
	Terry Fox Special Initiatives Program	OPR \$	35,379	NCI
	Modulators of Lymphocyte Function	OPR \$	87,625	NCI
Paranchych, W	Epidemiology of Pseudomonas aeruginosa Infection in Patients with Cystic Fibrosis	OPR \$	4,000	BCHC
	Characterization of Conserved and Variable Peptide Domains on the Surface of Pseudomonas Pili: Potential for Therapeutic Strategies in Patients with Cystic Fibrosis	OPR \$	19,950	CCFF
	Biosynthesis, Assembly, Structure and Function of Bacterial Pili	OPR \$	125,537	MRC
Paterson, A R P	Co-investigator with Henderson, J F (J S McEachern Laboratory): Inhibitors of Nucleoside Transport . . .			
Reithmeier, R A	Structure and Function of the Anion Transport Protein from Human Erythrocyte Membranes	OPR \$	30,000	CHF
	Structure and Function of the Anion Transport Protein from Human Erythrocyte Membranes	OPR \$	50,235	MRC
Schneider, W J	Receptor-mediated Endocytosis in Oocytes	OPR \$	52,900	AHFMR
	Hormonal Control of VLDL Metabolism	OPR \$	40,000	CHF
	Receptor-Mediated Endocytosis in Oocytes	OPR \$	49,250	MRC
Scraba, D G	Service Contract for Philips EM 420-STEM Electron Microscope	OPR \$	9,988	MRC
	(1) Studies of Mammalian Viruses (2) Biological Electron Microscopy	OPR \$	75,845	MRC
Smillie, L B	Co-investigator with Kay, C M: Group in Protein Structure and . . .			

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Sykes, B D	Co-investigator with Kay, C M: Group in Protein Structure and . . .				
Vance, D E	Transfer of Funds from University of British Columbia - Prize for a Paper Submitted to the 1985 Meeting of the Canadian Lipoprotein Conference	OPR	\$ 3,050	BM	
Weiner, J H	An Investigation of Membrane Transport Processes	OPR	\$ 84,304	MRC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Contracts	2	\$ 30,030	AHFMR	3	\$ 112,900
Operating	35	\$ 3,286,350	MRC	17	\$ 2,531,565
Technology Transfer	1	\$ 30,000	NSERC	1	\$ 53,472
Total	38	\$ 3,346,380	Other Provincial	3	\$ 158,642
			Other Agencies	14	\$ 489,801
			Total	38	\$ 3,346,380

Cross Cancer Institute

The Cross Cancer Institute is an independent organization and has a formal affiliation with the Faculty of Medicine. The Alberta Cancer Board administers research funds for the Cross Cancer Institute directly. All principal investigators at the Cross Cancer Institute also hold academic appointments with the University of Alberta. Operating awards administered directly by the Institute include:

ACB \$1,104,789; NCI \$336,951; AHFMR \$669,768; MRC \$37,372; private contracts and other institutions \$671,371; **total \$2,820,251.**

This total is not included in the University of Alberta total given at the beginning of this document. Research support is reported within the University's departments when awards are administered by the University.

Group Lipid and Lipoprotein

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Vance, D E	Lipid-Lipoprotein Group- Phospholipid and Lipoprotein Metabolism	OPR	\$ 554,560	AHFMR
Operating		AHFMR	1	\$ 554,560

Group NMR

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Allen, P S					
	Routine Operation and Maintenance of in vivo Animal NMR Facility	OPR	\$ 33,273	ACB	
	Co-investigator with Boisvert, D P J (Surgery and Clinical Surgery): In-vivo Nuclear Magnetic Resonance . . .				
	Clinical Applications of in vivo NMR to Cancer Research	OPR	\$ 72,500	ACB	
	In vivo Applications of NMR to Cancer	OPR	\$ 123,304	ACB	
	In vivo Applications of Nuclear Magnetic Resonance to Medicine	OPR	\$ 52,889	MRC	
	Data Storage Disk for in vivo NMR Facility	EQP	\$ 34,755	MRC	
	Co-investigator with Weir, B (Surgery and Clinical Surgery): Studies on the Prevention of Chronic . . .				
Type of Award	No.	Amount	Source of Funds	No.	Amount
Equipment	1	\$ 34,755	MRC	2	\$ 87,644
Operating	4	\$ 281,966	Other Provincial	3	\$ 229,077
Total	5	\$ 316,721	Total	5	\$ 316,721

Department of Health Services Administration and Community Medicine

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Guidotti, T L				
	Illness Experience of Firefighters	OPR \$	55,400	ACOH
	Symposium on Immunotoxicology	CFC \$	9,500	ACOH
	To Investigate the Feasibility of a Canadian Journal of Occupational Medicine Under Joint Sponsorship with the Canadian Board of Occupational Medicine	CTR \$	3,500	OMAC
Storch, J L				
	Survey of Canadian Hospital Administrators: Correlates of the Role Identity of an Organizational Professional	OPR \$	4,585	AFNR

Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Conferences	1	\$ 9,500	Other Provincial	3	\$ 69,485
Contracts	1	\$ 3,500	Other Agencies	1	\$ 3,500
Operating	2	\$ 59,985	Total	4	\$ 72,985
Total	4	\$ 72,985			

Department of Immunology

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Diener, E				
	Syngeneic Model to Test the Efficacy of Immunotoxin-Mediated Purging of Lymphoma Cells from Lymphoma-Bone Marrow Cell Mixtures	CTR \$	75,140	BIOM
	MRC Group on Immunoregulation	OPR \$	627,027	MRC
Fotedar, A				
	T Cell Recognition	OPR \$	84,000	AHFMR
	T Cell Recognition	OPR \$	30,763	MRC
Green, D R				
	Immunoregulatory T Cells & Molecules	OPR \$	86,150	AHFMR
Lee, K C				
	Macrophage-Tumor Interactions	OPR \$	56,999	ACB
	Functions of Dendritic Cells and Macrophages in Immune Induction	OPR \$	59,578	NCI
Longenecker, B M				
	Human Monoclonal Antibodies and Cancer Associated Antigens: Antibody Production, Analysis of B Cell Differentiation, and Potentiation of Antibody Formation	OPR \$	80,138	ACB
	Radioimmunoimaging and Detection of Human Cancer using Monoclonal Antibodies and Lectins	OPR \$	186,675	ACB
	Molecular Markers of Malignancy and Differentiation	OPR \$	59,100	MRC
	Mechanisms of Organ Specific Metastasis, Terry Fox Special Initiatives Program	OPR \$	91,766	NCI
Pilarski, L M				
	Analysis of the Immune Response of Multiple Myeloma Patients to Antologous Paraprotein	OPR \$	79,353	ACB
	Analysis of Help in Cytotoxic T Cell Responses	OPR \$	86,298	MRC
	Analysis of Immunodeficiency in Multiple Myeloma	OPR \$	61,344	NCI
Singh, B				
	Modulation of Diabetes in the Genetically Diabetic Db/Db and NOD Mice	OPR \$	42,771	CDA
	Co-investigator with Diener, E: MRC Group on Immunoregulation . . .			
Wegmann, T G				
	Co-investigator with Diener, E: MRC Group on Immunoregulation . . .			

Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Contracts	1	\$ 75,140	AHFMR	2	\$ 170,150
Operating	14	\$ 1,631,962	MRC	4	\$ 803,188
Total	15	\$ 1,707,102	Other Provincial	4	\$ 403,165
			Other Agencies	5	\$ 330,599
			Total	15	\$ 1,707,102

J S McEachern Laboratory

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Gati, W P	Co-investigator with Paterson, A R P: Interactions of Nucleoside Transport . . .				
Henderson, J F	Liquid Scintillation Counter	EQP	\$ 30,950	ACB	
	Inhibitors of Nucleoside Transport as Modulators of Nucleoside Metabolism in-vivo and in-vitro	OPR	\$ 40,552	ACB	
	Purine Nucleoside and Nucleotide Metabolism	OPR	\$ 43,202	MRC	
Paterson, A R P	Interactions of Nucleoside Transport Inhibitors with Tumor Cell Membranes: Fundamental Mechanisms and Therapeutic Applications	OPR	\$ 45,156	ACB	
	Co-investigator with Tyrrell, D L (Medical Microbiology and Infectious Diseases): Hepatitis B Antiviral Research . . .				
	Transport of Nucleosides	OPR	\$ 87,409	MRC	
	Studies in Cancer Chemotherapy	OPR	\$ 654,819	NCI	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Equipment	1	\$ 30,950	MRC	2	\$ 130,611
Operating	5	\$ 871,138	Other Provincial	3	\$ 116,658
Total	6	\$ 902,088	Other Agencies	1	\$ 654,819
			Total	6	\$ 902,088

Department of Medical Microbiology and Infectious Diseases

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Armstrong, G D	Biochemical Characterization of Intestinal Epithelial Cell Receptors for Human Enterotoxigenic Escherichia coli	OPR \$	36,190	MRC	
Robertson, J A	Characterization of Ureaplasma urealyticum	OPR \$	54,714	MRC	
Salmi, A A	Immunopathogenesis of Neurovirological Diseases	OPR \$	119,445	AHFMR	
Taylor, D E	Determination of G+C Tatios and DNA Homology	CTR \$	2,000	HWC	
	Genetic and Physical Characterization of Antibiotic Resistance Plasmids of the H Incompatibility Group	OPR \$	47,834	MRC	
Tyrrell, D L	Co-investigator with Micetich, R G (Pharmacy and Pharmaceutical Sciences): Novel Anti-Viral Agents . . .				
	Hepatitis B Antiviral Research	CTR \$	113,230	BIOM	
	Development of DNA Probes	CTR \$	40,794	CHEM	
	Neurovirological Research	OPR \$	10,000	CHEM	
	Neurovirological Research	OPR \$	4,000	EGH	
	Paramyxoviruses, Assembly, Persistence and Autoimmunity	OPR \$	73,929	MRC	
	Neurovirological Research	OPR \$	5,000	ORTHO	
	Neurovirological Research	OPR \$	60,709	PENN	
	Neurovirological Research	OPR \$	685	PFIZ	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Contracts	3	\$ 156,024	AHFMR	1	\$ 119,445
Operating	10	\$ 412,507	MRC	4	\$ 212,667
Total	13	\$ 568,531	Other Federal	1	\$ 2,000
			Other Agencies	7	\$ 234,419
			Total	13	\$ 568,531

Department of Medicine and Clinical Medicine

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Bretscher, P A	Antigen-Specific Regulation and Modulation of the Immune Response. Previous title: Paralysis and Induction of Lymphocytes	OPR	\$ 76,944	MRC
Clandinin, M T	In Support of Seminar and Research Related Activities of the Nutrition and Metabolism Research Group	OPR	\$ 750	HEINZ
	Essential Fatty Acid Chain Elongation - Desaturation during Neonatal Development	OPR	\$ 36,445	MRC
Dasgupta, M K	Role of Biofilm Adherent Bacterial Colonization of Tenckhoff Catheters in Peritonitis Associated with CAPD	OPR	\$ 14,000	KFC
	Co-investigator with Dossetor, J B: Cooperative Research and Development . . .			
Davis, P	The Mechanism of Action of Gold Compounds in Rheumatoid Arthritis	OPR	\$ 38,000	AS
Dossetor, J B	Cooperative Research and Development Grant - Development of Urine Collection and Peritoneal Dialysis System that Resist Bacterial Colonization and Reduce Catheter-associated Infections	OPR	\$ 14,000	NSERC
Fedorak, R N	Adaptation & Regulation of Intestinal Glucose Transport	OPR	\$ 187,131	AHFMR
Finegood, D T	Hepatic Insulin Action and Insulin Resistance	OPR	\$ 134,328	AHFMR
Grace, M G	Co-investigator with Pabst, H F (Paediatrics): Hemophilus Influenzae b (Hib) Vaccination . . .			
	Co-investigator with Overton, T R (Applied Sciences in Medicine): A Clinical Trial of Skeletal Activation . . .			
Harley, C H	Co-investigator with Overton, T R (Applied Sciences in Medicine): A Clinical Trial of Skeletal Activation . . .			
Hulbert, W	To Provide Monitoring Equipment	INF	\$ 132,835	AHFMR
Jugdutt, B I	Two-Dimensional Echocardiography & Doppler	OPR	\$ 143,000	AHFMR
	Prolonged Nitroglycerin Therapy in Acute Myocardial Infarction: Effect on Shape Distortion and Infarct Expansion	OPR	\$ 50,000	CHF
	Modification of Ventricular Geometry and Function after Myocardial Infarction	OPR	\$ 18,000	CHF
	Ischemic Heart Disease: Preservation of Ischemic Myocardium/Healing after Myocardial Infarction	OPR	\$ 49,476	MRC
Kappagoda, C T	Co-investigator with Mant, M J: Platelet Activation/Reactivity . . .			
	Function of Atrial Receptors	OPR	\$ 36,997	MRC
Kaufman, S	Cardiac Control of Fluid and Electrolyte Balance	OPR	\$ 35,000	CHF
	Mechanisms by which Atrial Stretch Contributes to Fluid and Electrolyte Homeostasis	OPR	\$ 38,465	MRC
	Inappropriate Drinking - A Study of Pathological Thirst and Fluid Retention	OPR	\$ 8,838	MRC
King, E G	Co-investigator with Tulip, J (Engineering, Electrical Engineering): Medical Laser Facility . . .			
King, M	Studies on Mucus Clearance	OPR	\$ 62,400	AHFMR
	Mucus Clearance by Airflow Interaction	OPR	\$ 26,097	CCFF
	Studies on Respiratory Tract Mucus	OPR	\$ 40,603	MRC
Kovithavongs, T	T4 CTL and T8 CTL in Renal Allograft Rejection	OPR	\$ 29,989	KFC
Leung, W C	Expression and Protein Engineering of Viral Neutralization Antigens	OPR	\$ 10,200	MRC
	Protein Engineering of Human Interferon Gamma	OPR	\$ 51,750	NCI
Mahachai, V	Factors Influencing Intestinal & Hepatic First-Pass Metabolism of Drugs	OPR	\$ 184,535	AHFMR
Man, G C W	Studies on Reflex Changes in Bronchomotor Tone During High Frequency Oscillation	OPR	\$ 28,565	MRC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Man, S F P	Non-ventilatory Lung Function in Inhalational Injury	OPR	\$ 45,901	MRC
	Co-investigator with Noujaim, A A (Pharmacy and Pharmaceutical Sciences): Aliphatic Amines as Potential Radiopharmaceuticals . . .			
	Radioaerosol Scanning in Interstitial Lung Disease	OPR	\$ 34,000	MSI
	To Cover Research Expenses in Laboratory	OPR	\$ 2,000	TWH
Mant, M J	Platelet Activation/Reactivity in Cardiovascular Disease	OPR	\$ 50,385	MRC
McBlain, W A	Identification of Functional Steroid Receptors in Human Mammary and Prostatic Cancer	OPR	\$ 40,818	ACB
Molnar, G D	Immunology of Diabetes to be held in Edmonton, Alberta June 26-28/86	CFC	\$ 15,000	AHFMR
Moreau, M J	Experimental Evaluation of Spinal Fixation Devices	OPR	\$ 23,640	MRC
Morrish, D W	Regulation of Placental Growth, Differentiation and Peptide Hormone Secretion	OPR	\$ 43,340	MRC
Preiksaitis, J K	Monoclonal Gammopathies in Cyclosporine Treated Renal Allograft Recipients - Natural History and Role of Herpesvirus Infections	OPR	\$ 20,000	CIDS
	EBV Infection and Lymphoproliferation in Renal Allograft Recipients	OPR	\$ 15,000	KFC
Russell, A S	Co-investigator with Jamali, F (Pharmacy and Pharmaceutical Sciences): Stereoselective Pharmacokinetics . . .			
	A Longitudinal Study of Non-Specific Immune and Inflammatory Responses in Normal Pregnant Subjects	OPR	\$ 16,680	MSI
Thomson, A B R	Functional Changes in the Irradiated Intestine	OPR	\$ 45,340	ACB
	Intestinal Membrane Transport in Diabetes Mellitus	OPR	\$ 41,011	CDA
	Critical Period Programming	OPR	\$ 40,000	CFIC
	Intestinal Absorption in Health and Disease	OPR	\$ 75,353	MRC
	Co-investigator with Hawrysh, Z J (Home Economics, Foods and Nutrition): Development of a Gluten-free Rice . . .			
	Co-investigator with Clandinin, M T (Home Economics, Foods and Nutrition): Bellows Assembly for Existing Isotope . . .			
	Gastroenterology Research Trust	OPR	\$ 36,500	SYN
Trayhurn, P	Regulation of Energy Balance	OPR	\$ 388,726	AHFMR
Witkowski, F X	Autonomic Neural Influences in Arrhythmogenesis	OPR	\$ 50,250	AHFMR
	Autonomic Nueral Influences in Arrhythmogenesis	OPR	\$ 45,000	CHF
Wong, K	Investigations into the Activity and Distribution of Adenylate Cyclase and Binding Kinetics of Platelet Activating Factor in Human Neutrophils	OPR	\$ 42,773	MRC
	Free Radical Formation by Human Neutrophils: Their Regulation and Role in Inflammatory Diseases	OPR	\$ 8,900	MRC

Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	1	\$ 15,000	AHFMR	9	\$ 1,298,205
Infrastructure	1	\$ 132,835	MRC	16	\$ 616,825
Operating	44	\$ 2,381,130	NSERC	1	\$ 14,000
Total	46	\$ 2,528,965	Other Provincial	2	\$ 86,158
			Other Agencies	18	\$ 513,777
			Total	46	\$ 2,528,965

Department of Obstetrics and Gynaecology

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Scott, J Z	Endometriosis Study	CTR	\$ 37,100	SYN
Contracts		Other Agencies	1	\$ 37,100

Department of Paediatrics

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Chan, G Y	Co-investigator with Schiff, D: Mechanism of Bilirubin Toxicity . . .			
Coe, J Y	Pharmacological Manipulation of the Neonatal Circulation	OPR	\$ 100,000	AHFMR
Godel, J C	Northern Infant Nutrition Study	OPR	\$ 32,342	HWC
Grace, M G	Co-investigator with Godel, J C: Northern Infant Nutrition Study . . .			
Jaworski, M A	Tissue-specific and Generalized Autoimmunity in the BB Rat and in Human Insulin-dependent Diabetes Mellitus (IDDM)	OPR	\$ 46,295	MRC
Larke, R P	Immunization Program Against Hepatitis B Infection to Residents of the Baffin Zone	CTR	\$ 24,340	HWC
Lopaschuk, G D	Coenzyme A Regulation of Cardiac Metabolism	OPR	\$ 42,500	MRC
Lord, C	Cognitive Disorder in Children with Autism	OPR	\$ 13,440	NSERC
	Peer-directed Communication and Interaction in Children with Autism	OPR	\$ 16,030	SSHRC
McCoy, E E	Metabolic Studies of Down's Syndrome	OPR	\$ 13,355	MRC
Pabst, H F	Hemophilus Influenzae b (Hib) Vaccination Trial Amongst Infants in Inuit Communities	OPR	\$ 32,537	HWC
	Co-investigator with Godel, J C: Northern Infant Nutrition Study . . .			
	Vaccine Project in Nepal	OPR	\$ 5,000	ROTCL
Schiff, D	Mechanism of Bilirubin Toxicity in Cultured Neural Cells	OPR	\$ 33,884	MRC
Van Aerde, J	Fat Utilization In Parenterally Fed Newborn Infants Measured with Indirect Caloricity and with Tracer Kinetics of 13	OPR	\$ 136,000	AHFMR
	Co-investigator with Clandinin, M T (Home Economics, Foods and Nutrition): Bellows Assembly for Existing Isotope . . .			
Wenman, W M	Pathogenesis of Human Chlamydial Infections	OPR	\$ 54,175	MRC

<i>Type of Award</i>	<i>No.</i>	<i>Amount</i>	<i>Source of Funds</i>	<i>No.</i>	<i>Amount</i>
Contracts	1	\$ 24,340	AHFMR	2	\$ 236,000
Operating	12	\$ 525,558	MRC	5	\$ 190,209
Total	13	\$ 549,898	NSERC	1	\$ 13,440
			SSHRC	1	\$ 16,030
			Other Federal	3	\$ 89,219
			Other Agencies	1	\$ 5,000
			Total	13	\$ 549,898

Department of Pathology

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Amy, R M	Co-investigator with Beattie, O B (Arts, Anthropology): Completion of the Excavation and . . .			
Lin, C C	Transfer from University of Calgary - Chromosome Structure and Function in Man and Other Eukaryotic Species	OPR	\$ 68,950	MRC
McGann, L E	Annual Meeting of the International Society for Cryobiology, Edmonton, June 22-26, 1987	CTR	\$ 1,400	ATOUR
	The Plasma Membrane: Target for Freezing Injury?	OPR	\$ 47,280	MRC
Stinson, R A	Studies of Human Alkaline Phosphates	OPR	\$ 61,518	MRC
Walker, K	Co-investigator with Thomson, A B R (Medicine and Clinical Medicine): Functional Changes in the Irradiated . . .			

<i>Type of Award</i>	<i>No.</i>	<i>Amount</i>	<i>Source of Funds</i>	<i>No.</i>	<i>Amount</i>
Contracts	1	\$ 1,400	MRC	3	\$ 177,748
Operating	3	\$ 177,748	Other Provincial	1	\$ 1,400
Total	4	\$ 179,148	Total	4	\$ 179,148

Department of Pharmacology

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Allen, T M				
	Prolongation of Plasma Half-Life of Liposomes	CTR \$	46,390	LTi
	Membrane Fusion in Model Membrane Systems	OPR \$	38,415	MRC
	Drug Carriers and the Mononuclear Phagocyte System	OPR \$	45,310	MRC
	Marine Natural Products with Antineoplastic Activities	OPR \$	53,082	NCI
Baer, H P				
	Smooth Muscle Structure and Function Satellite Symposium, International Union of Physiological Sciences, to be held in Banff, Alberta, Jul 1-5/86	CFC \$	8,950	AHFMR
	Forskolin and Adenylate Cyclase	OPR \$	8,355	MRC
Clanachan, A S				
	Factors Affecting Presynaptic and Postsynaptic Actions of Adenosine	OPR \$	40,000	CHF
Cook, D A				
	Blood Vessel Reactivity and Cerebrovascular Spasm	OPR \$	51,450	CHF
	Drug Receptors and Biomembranes - Histamine Receptors	OPR \$	35,144	MRC
	Co-investigator with Weir, B (Surgery and Clinical Surgery): Studies on the Prevention of Chronic . . .			
Frank, G B				
	Satellite Symposium to the International Congress of the International Union of Physiological Sciences	CFC \$	15,000	AHFMR
	Nature of the Opiate Drug Receptor and its Interaction with Narcotics and Endogenous Opiate-like Polypeptides	OPR \$	28,170	AMHAC
	Studies on Contraction of Skeletal Muscle	OPR \$	49,582	MRC
	To Host A Conference Entitled 'II International Symposium on Excitation-Contraction Coupling in Skeletal, Cardiac & Smooth Muscle, July 7 - 9, 1986	CFC \$	8,950	MRC
	An Investigation of the Properties of Opiate Drug Receptors Located on Excitable Cell Membranes	OPR \$	30,535	MRC
Gordon, T				
	International Union of Physiological Sciences (Sattelite Symposium)	CFC \$	15,000	AHFMR
	Ca2+ Overload in Dystrophic Heart Muscle	OPR \$	35,776	CHF
	Factors Influencing Motor Unit Size	OPR \$	38,588	MDA
	Mechanisms of Motoneurone Response and Motor Unit Reorganization after Peripheral Nerve Injuries	OPR \$	9,225	MRC
Reiffenstein, R J				
	Neurological Actions of Sulphide	OPR \$	93,000	ACOH
	Role of Cholinergic Input in Hippocampal Functioning	OPR \$	10,943	MRC
Smith, P A				
	Modulation of Synaptic Transmission in Sympathetic Ganglia and Spinal Cord	OPR \$	34,652	MRC

<i>Type of Award</i>	<i>No.</i>	<i>Amount</i>	<i>Source of Funds</i>	<i>No.</i>	<i>Amount</i>
Conferences	4	\$ 47,900	AHFMR	3	\$ 38,950
Contracts	1	\$ 46,390	MRC	10	\$ 271,111
Operating	16	\$ 602,227	Other Provincial	2	\$ 121,170
Total	21	\$ 696,518	Other Agencies	6	\$ 265,286
			Total	21	\$ 696,518

Department of Physiology

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Bourne, G A				
	Delineation of the Roles of the Calcium and Cyclic Nucleotide Messenger Systems in Mediating the Biphasic Release of Gonadotropins	OPR \$	37,430	MRC
Cheeseman, C I				
	Co-investigator with Thomson, A B R (Medicine and Clinical Medicine): Functional Changes in the Irradiated . . .			
	Co-investigator with Thomson, A B R (Medicine and Clinical Medicine): Intestinal Membrane Transport in . . .			
	Co-investigator with Thomson, A B R (Medicine and Clinical Medicine): Critical Period Programming . . .			
	Control of Intestinal Transport	OPR \$	8,283	MRC
French, A S				
	Sensory Transduction in Mechanoreceptors and Photoreceptors	OPR \$	44,448	MRC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Harvey, S	Gamma-Counting Equipment	EQP	\$ 50,810	NSERC	
Hutchison, K J	Hemodynamics and Atherosclerosis	OPR	\$ 41,000	CHF	
Jarvis, S M	Kinetic and Molecular Properties of Nucleoside Transport in Animal Cells	OPR	\$ 44,325	MRC	
Pang, P K	Anti-Hypertension, Peptides, and Vertebrate Physiology Research	OPR	\$ 212,673	AHFMR	
	Herbal Medicine Program	CTR	\$ 200,000	TAIHO	
	Routine Pharmacological Testing of Compounds	OPR	\$ 21,739	TTU	
Pearson, K G	Morphological and Electrophysiological Studies on Identified Neurons	OPR	\$ 54,224	MRC	
Poznansky, M J	Soluble Enzyme Albumin Polymers: New Approaches to Enzyme Therapy	OPR	\$ 81,408	MRC	
	Feasibility Study Growth Hormone: Albumin Conjugates	CTR	\$ 62,500	PMI	
Prochazka, A	Neural Control of Mammalian Movement	OPR	\$ 230,000	AHFMR	
Sanders, E J	Morphological and Physiological Aspects of Cellular Contact in Development	OPR	\$ 36,069	MRC	
	Maintenance Grant for Philips 300 Electron Microscope	OPR	\$ 6,048	MRC	
Schachter, M	Maintenance Grant for Philips 300 Electron Microscope	OPR	\$ 1,750	MRC	
	Endogenous Active Compounds - Proteases, Peptides, NGF and Other Mediators	OPR	\$ 6,094	MRC	
Stein, R B	Commercialization of an Improved Artificial Leg	TTR	\$ 25,000	AHFMR	
	Neurophysiological Studies on the Control of Movement	OPR	\$ 70,154	MRC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Contracts	2	\$ 262,500	AHFMR	3	\$ 467,673
Equipment	1	\$ 50,810	MRC	11	\$ 390,233
Operating	15	\$ 895,645	NSERC	1	\$ 50,810
Technology Transfer	1	\$ 25,000	Other Agencies	4	\$ 325,239
Total	19	\$ 1,233,955	Total	19	\$ 1,233,955

Department of Psychiatry

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Baker, G B	Co-investigator with Boisvert, D P J (Surgery and Clinical Surgery): Studies on the Pathophysiology . . .			
	Establishment of an Alberta Mental Health Advisory Council Research Unit to Study the Neurochemical Bases of Psychiatric Disorders	OPR \$	250,000	AMHAC
Bland, R C	Prevalence of Mental Illness in Edmonton	OPR \$	44,100	AMHAC
Bornstein, R A	Co-investigator with Baker, G B: Establishment of an Alberta Mental . . .			
Douglass, A B	Grass Polygraph/EEG Machine and IBM PC-XT Computer for Sleep Studies in Schizophrenia Project	EQP \$	28,100	AMHAC
	Co-investigator with Baker, G B: Establishment of an Alberta Mental . . .			
Greenshaw, A J	B-Phenylethylamine, p-Tyramine & p-Octopamine & the Treatment of Affective Disorders	OPR \$	47,400	AHFMR
	Chronic Effects of B-phenylethylamine, Tryptamine and Antidepressants on Brain Amine Receptors	OPR \$	36,949	AMHAC
	Co-investigator with Baker, G B: Establishment of an Alberta Mental . . .			
Joyce, A S	Co-investigator with Piper, W E: Preconditions and Response to Psychodynamic . . .			
Newman, S C	A Prospective Study of the Mortality of Schizophrenic Patients in Alberta, 1976-1985	OPR \$	31,500	AMHAC
Piper, W E	Preconditions and Response to Psychodynamic Interpretations in Short-term, Individual Psychotherapy	OPR \$	37,569	AMHAC
	A Controlled Study of Patient Suitability and Outcome in Short-term, Individual Psychotherapy	OPR \$	39,667	HWC

Type of Award	No.	Amount	Source of Funds	No.	Amount
Equipment	1	\$ 28,100	AHFMR	1	\$ 47,400
Operating	7	\$ 487,185	Other Provincial	6	\$ 428,218
Total	8	\$ 515,285	Other Federal	1	\$ 39,667
			Total	8	\$ 515,285

Department of Surgery and Clinical Surgery

Investigator	Project Title	Award	Amount	Agency
Boisvert, D P J				
	In-vivo Nuclear Magnetic Resonance Studies of Tumor Diagnosis and Pathophysiology	OPR	\$ 28,620	ACB
	Studies on the Pathophysiology and Biochemistry of Peritumor Brain Edema	OPR	\$ 21,912	ACB
	Isoflurane Protects Against Focal Cerebral Ischaemia During Hypotension in Primates	OPR	\$ 18,000	ANAC
	Co-investigator with Tulip, J (Engineering, Electrical Engineering): Medical Laser Facility . . .			
Bowes, K L				
	G I Motility Studies	OPR	\$ 41,385	MRC
Callaghan, J C				
	Thirty Years of Open Heart Surgery at the University of Alberta Hospital to be held in Edmonton, Alberta September 17-18, 1986	CFC	\$ 17,981	AHFMR
Dowman, R				
	Operantly Conditioning Somatosensory Evoked Potentials to Control Psychogenic Pain	OPR	\$ 13,248	AMHAC
Koo, J				
	Introduction and Establishment of Ambulatory 24 hour pH Monitoring of the Lower Esophagus as a Clinical Test in the Diagnosis and Management of Gastroesophageal Reflux Disease	OPR	\$ 20,977	MSI
McKean, J D S				
	Photoradiation Therapy of Brain Tumors	OPR	\$ 45,285	ACB
	Co-investigator with Tulip, J (Engineering, Electrical Engineering): Medical Laser Facility . . .			
	Laser Use for Capital Replacement	OPR	\$ 15,000	RCMP
Rajotte, R V				
	Co-investigator with Thomson, A B R (Medicine and Clinical Medicine): Intestinal Membrane Transport in . . .			
	Cryopreservation of Pancreatic Islet Tissue for Transplantation	OPR	\$ 48,265	MRC
	Co-investigator with Clandinin, M T (Home Economics, Foods and Nutrition): Bellows Assembly for Existing Isotope . . .			
	Co-investigator with Clandinin, M T (Home Economics, Foods and Nutrition): Demonstration of the in-vivo Significance . . .			
Russell, J C				
	Ischemic Heart Disease in a Rat Model	OPR	\$ 30,000	CHF
Smith, R S				
	Mechanisms of Axonal Transport	OPR	\$ 31,212	MRC
Stockbridge, N L				
	Signal Processing by Neurons	OPR	\$ 53,350	AHFMR
	Role of Calcium in Transmitter Release	OPR	\$ 10,211	MRC
Warnock, G L				
	Transplantation of Human Islets of Langerhans	OPR	\$ 44,500	AHFMR
Weir, B				
	Studies on the Prevention of Chronic Cerebral Vasospasm and Delayed Ischemia Following Subarachnoid Hemorrhage in Primates	OPR	\$ 47,576	MRC
	Misoprostol/Neuro-GI Study	OPR	\$ 3,500	SEARL

Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	1	\$ 17,981	AHFMR	3	\$ 115,831
Operating	16	\$ 473,041	MRC	5	\$ 178,649
Total	17	\$ 491,022	Other Provincial	4	\$ 109,065
			Other Federal	1	\$ 15,000
			Other Agencies	4	\$ 72,477
			Total	17	\$ 491,022

Faculty of Nursing

Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	2	\$ 5,680	Other Provincial	12	\$ 154,534
Operating	14	\$ 157,235	Other Federal	1	\$ 3,166
Total	16	\$ 162,915	Other Agencies	3	\$ 5,215
			Total	16	\$ 162,915

Faculty of Nursing

Investigator	Project Title	Award	Amount	Agency
Davies, E M				
	Childhood Cancer as Chronic Disease: The Impact on Siblings, Student - K M Brett	OPR	\$ 2,705	AARN
	Family Stress and Coping, Student - M E Lock	OPR	\$ 660	AARN
	To Support the Western Consortium for Cancer Nursing Research - Priority Setting Workshop, University of Alberta, Jan 29-31/87	CFC	\$ 2,500	AFNR
Drummond, J				
	The Meaning of Infant Cry Behavior to the Mother	OPR	\$ 13,800	AFNR
Field, P A				
	A Survey of Postpartum Nursing Care Practice in Community Health Agencies in Alberta, Award Held at University of Lethbridge by M J Houston - \$7,487.00	OPR		AFNR
Giovannetti, P				
	Survey of Quality Assurance Programs in Selected Hospitals in Alberta	OPR	\$ 50,000	AFNR
	Nursing Instrument On-line Access System	OPR	\$ 2,500	AFNR
Harrison, M J				
	Father Interactions with Preterm and Term Infants	OPR	\$ 1,850	AARN
	Maternal Interactions with Term and Preterm Infants	OPR	\$ 8,690	AFNR
Lander, J				
	Development of a Research Proposal to Study the Effects of Anxiety and Memory on Pain	OPR	\$ 2,500	AFNR
MacPhail, J				
	Childhood Cancer as Chronic Disease: The Impact on Siblings, Student - K M Brett	OPR	\$ 3,100	AFNR
Morse, J M				
	Working Mothers: Coping with Breastfeeding	OPR	\$ 41,380	AFNR
	The Meaning and Use of Television in the Daily Lives of the Confined Elderly, Student - N MacLeod-Engel	OPR	\$ 1,446	ASSCH
	National Health Research Scholar award	OPR	\$ 3,166	HWC
Relyea, J M				
	Co-investigator with Giovannetti, P: Nursing Instrument On-line Access . . .			
Ross, J D				
	The Ethnography of Childhood: 2nd International Workshop, Camrose, Alberta, Jul 6-8/87	CFC	\$ 3,180	AFNR
Skillen, D L				
	Development of an Occupational Risk Factor Assessment Instrument for Community-Based Health Care Practitioners	OPR	\$ 2,500	AFNR
Yonge, O				
	Application for Research Traineeship	OPR	\$ 22,938	AFNR

Faculty of Pharmacy and Pharmaceutical Sciences

Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	3	\$ 261,480	AHFMR	3	\$ 148,412
Equipment	1	\$ 33,412	MRC	15	\$ 429,479
Infrastructure	1	\$ 40,000	NSERC	1	\$ 37,060
Operating	22	\$ 637,272	Other Provincial	6	\$ 169,793
Technology Transfer	2	\$ 112,060	Other Agencies	4	\$ 299,480
Total	29	\$ 1,084,224	Total	29	\$ 1,084,224

Faculty of Pharmacy and Pharmaceutical Sciences

Investigator	Project Title	Award	Amount	Agency
Coutts, R T				
	Co-investigator with Baker, G B (Medicine, Psychiatry): Establishment of an Alberta Mental . . .			
	Detailed Trace Organic Analysis of Edmonton Water	CTR	\$ 2,730	HRUD
	Co-investigator with Pasutto, F M: Biosynthesis and Pharmacological . . .			
	Co-investigator with Jamali, F: Stereoselective Pharmacokinetics . . .			
	Co-investigator with Crawford, R J (Science, Chemistry): Mass Spectrometry Service Laboratory . . .			
Danielson, T J				
	Co-investigator with Baker, G B (Medicine, Psychiatry): Establishment of an Alberta Mental . . .			
	Metabolism of Neurochemical Agents	OPR	\$ 7,390	MRC
Dean				
	For Support of Medical Research using the SLOWPOKE Nuclear Reactor	INF	\$ 40,000	AHFMR
	General Research Grant to the Dean for the Support of Research in the Faculty of Pharmacy and Pharmaceutical Sciences	OPR	\$ 15,000	MRC
	Pharmacy Patient Education	OPR	\$ 5,670	WRFN
Flanagan, R J				
	Co-investigator with Wiebe, L I: Novel Radiolabelled Steroids for . . .			
Jamali, F				
	Stereoselective Pharmacokinetics of Certain Non-Steroidal Antiinflammatory Drugs	OPR	\$ 37,430	MRC
	Stereoselective Pharmacokinetics of Ketoprofen	CTR	\$ 75,000	RHONE
Joshua, A V				
	Co-investigator with Scott, J R: Development of SPECT Brain Blood . . .			
Knaus, E E				
	The Design, Synthesis and Evaluation of Novel Heterocycles with Antineoplastic Activity	OPR	\$ 61,990	ACB
	The Design and Pharmacological Evaluation of Heterocyclic Calcium Channel Antagonists and Agonists	OPR	\$ 41,580	MRC
	Bruker AM-300 MHz Nuclear Magnetic Resonance (NMR) Operator Salary and Maintenance Support	OPR	\$ 38,358	MRC
	The Design and Pharmacological Evaluation of Heterocyclic Calcium Slow Channel Blockers	OPR	\$ 9,000	MRC
	Hewlett-Packard 5995A Gas Chromatograph-Mass Spectrometer (GC-MS), Maintenance Contract and Technician- Operator	OPR	\$ 20,000	MRC
	The Design and Pharmacological Evaluation of New Nitrogen Heterocycles	OPR	\$ 40,166	MRC
	Co-investigator with Wiebe, L I: Radiohalogenated Pyrimidine Nucleosides . . .			
	Co-investigator with Crawford, R J (Science, Chemistry): Mass Spectrometry Service Laboratory . . .			
Micetich, R G				
	Novel Anti-Viral Agents	TTR	\$ 75,000	AHFMR
	Co-investigator with Baker, G B (Medicine, Psychiatry): Establishment of an Alberta Mental . . .			
	The Design, Synthesis, and Study of New Beta-Lactam Compounds which are Expected to Possess Beta-Lactamase Inhibitory Activity and/or a Useful Spectrum of Antibiotic Activity	CTR	\$ 183,750	TAIHO
Noujaim, A A				
	Co-investigator with Longenecker, B M (Medicine, Immunology): Radioimmunoimaging and Detection . . .			
	Anticancer Drug Targeting Using Monoclonal Antibodies	OPR	\$ 9,900	ACB
	Aliphatic Amines as Potential Radiopharmaceuticals for the Study of Lung Function	OPR	\$ 43,202	MRC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Pasutto, F M				
	Co-investigator with Jamali, F: Stereoselective Pharmacokinetics . . .			
	Biosynthesis and Pharmacological Evaluation of Immunosuppressive Cyclosporins	OPR \$	8,078	MRC
	Co-investigator with Crawford, R J (Science, Chemistry): Mass Spectrometry Service Laboratory . . .			
	Co-investigator with Jamali, F: Stereoselective Pharmacokinetics . . .			
Rogers, J A				
	Improved Bioavailability of Drugs Formulation with Phospholipids	OPR \$	46,899	MRC
Scott, J R				
	Development of SPECT Brain Blood Flow Radiodiagnostic Agents	TTR \$	37,060	NSERC
Shysh, A J				
	Indium-111 PNA Uptake in T-antigen Expressing Tumors	OPR \$	3,750	MRC
	Biological Investigation of Radiolabelled Conjugated Lectins	OPR \$	27,063	MRC
Tam, Y K				
	Pharmacokinetics of Lidocaine during Prolonged Intravenous Infusion	OPR \$	38,000	CHF
Wiebe, L I				
	In vivo Localization of Hypoxic Cells with γ -Emitting Radiolabelled Radiosensitizers	OPR \$	9,613	ACB
	In vivo Localization of Hypoxic Cells with γ -Emitting Radiolabelled Radiosensitizers	OPR \$	47,730	ACB
	Novel Radiolabelled Steroids for Tracing Hormone Receptor Sites	OPR \$	34,890	ACB
	UV-Photodiode Array Detector for HPLC Separations	EQP \$	33,412	AHFMR
	Co-investigator with Tyrrell, D L (Medicine, Medical Microbiology and Infectious Diseases): Hepatitis B Antiviral Research . . .			
	Co-investigator with Knaus, E E: Hewlett-Packard 5995A Gas Chromatograph-Mass . . .			
	In vivo Metabolism of Fluorinated Nucleosides Using Whole-Body NMR	OPR \$	44,342	MRC
	Radiohalogenated Pyrimidine Nucleosides for Use in Diagnostic Oncology and Virology	OPR \$	47,221	MRC
Wolowyk, M W				
	Co-investigator with Knaus, E E: The Design and Pharmacological . . .			

Faculty of Physical Education and Recreation

Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Conferences	1	\$ 881	NSERC	2	\$ 20,688
Equipment	1	\$ 10,003	SSHRC	1	\$ 881
Operating	7	\$ 221,955	Other Provincial	3	\$ 174,800
Total	9	\$ 232,839	Other Federal	3	\$ 36,470
			Total	9	\$ 232,839

Department of Physical Education and Sport Studies

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Belcastro, A N				
	Etiology of Muscle Fatigue Cellular Perspectives	OPR \$	10,685	NSERC
	Swinging-bucket Rotor (50.1) for Isolation of Organelles Involved with Ca ²⁺ Metabolism	EQP \$	10,003	NSERC
Grace, M G				
	Co-investigator with Pabst, H F (Medicine, Paediatrics): Vaccine Project in Nepal . . .			
Hall, A				
	The Status of Women in NSOs	OPR \$	23,000	FAS
Hinings, C R				
	An Analysis of the Managerial Arrangements & Implementation of Plans in Voluntary Sport Organizations	OPR \$	15,800	ARP
Quinney, H A				
	Co-investigator with Belcastro, A N: Swinging-bucket Rotor (50.1) for . . .			
	Alberta Fitness Network	OPR \$	156,000	RPWF
	High Velocity Resistance Training for Ice Hockey	OPR \$	8,470	SPC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>		
Slack, T						
Co-investigator with Hinings, C R: An Analysis of the Managerial Arrangements . . .						
Co-investigator with Hinings, C R (Business, Organizational Analysis): Planning, Organization and Implementation . . .						
Co-investigator with Hall, A: The Status of Women in NSOs . . .						
A National Conference on Sport Administration		OPR	\$ 5,000	SPC		
Research Into Sport Administration/Management, Edmonton, Alberta, Oct 23-25/86		CFC	\$ 881	SSHRC		
Watkinson, E J						
Resource Kit on Women and Physical Activity		OPR	\$ 3,000	RPWF		
Type of Award		No.	Amount	Source of Funds	No.	Amount
Conferences		1	\$ 881	NSERC	2	\$ 20,688
Equipment		1	\$ 10,003	SSHRC	1	\$ 881
Operating		7	\$ 221,955	Other Provincial	3	\$ 174,800
Total		9	\$ 232,839	Other Federal	3	\$ 36,470
				Total	9	\$ 232,839

Faculty of Rehabilitation Medicine

Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Operating	7	\$ 182,083	NSERC	1	\$ 12,500
Total	7	\$ 182,083	Other Provincial	1	\$ 75,000
			Other Federal	1	\$ 38,722
			Other Agencies	4	\$ 55,861
			Total	7	\$ 182,083

Department of Occupational Therapy

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Bhambhani, Y				
Efficacy of Three Physical Training Programs on Submaximal Auxillary Crutch Walking Performance		OPR	\$ 19,936	MSI
Operating		Other Agencies	1	\$ 19,936

Department of Physical Therapy

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Clarkson, H M					
	Co-investigator with Bhambhani, Y (Occupational Therapy): Efficacy of Three Physical Training . . .				
Kumar, S	Functional Evaluation of Human Back	OPR	\$ 75,000	ACOH	
	Static and Dynamic Strength	OPR	\$ 12,500	NSERC	
Piper, M C	Impact of Pre-term Birth of the Neuromotor Development of the Premature Infant	OPR	\$ 38,722	HWC	
	Effect of Early Physical Therapy on the Neuromotor Status of the High Risk Infant	OPR	\$ 12,000	MDBDF	
	Correlation of Neuromotor Assessments with Magnetic Resonance Imaging in the Preterm Infant	OPR	\$ 8,000	NIMR	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Operating	5	\$ 146,222	NSERC	1	\$ 12,500
			Other Provincial	1	\$ 75,000
			Other Federal	1	\$ 38,722
			Other Agencies	2	\$ 20,000
			Total	5	\$ 146,222

Department of Speech Pathology and Audiology

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Boberg, E	Comprehensive Stuttering Treatment Program	OPR	\$ 15,925	MSI
Operating	Other Agencies	1	\$ 15,925	

Faculty of Science

Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Conferences	4	\$ 54,060	AHFMR	2	\$ 50,222
Contracts	44	\$ 1,628,275	MRC	2	\$ 52,653
Equipment	17	\$ 1,648,316	NSERC	281	\$ 9,212,233
Infrastructure	6	\$ 198,071	SSHRC	2	\$ 12,177
Operating	301	\$ 7,981,910	Other Provincial	34	\$ 1,306,648
Technology Transfer	2	\$ 250,680	Other Federal	36	\$ 776,275
Total	374	\$ 11,761,312	Other Agencies	17	\$ 351,104
			Total	374	\$ 11,761,312

Department of Botany

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Cass, D D	Research on Gamete Cell Fusion in Flowering Plants; Brassica Root Infection by Pseudomona	OPR	\$ 15,000	NSERC
Cossins, E A	Folate and Amino Acid Metabolism in Plants	OPR	\$ 59,666	NSERC
	Co-investigator with Gifford, D J: DNA Isolation and Subcellular Fractionation . . .			
Dale, M R T	A Detailed Ecological Study of Saxicolous Crustose Lichen Community in Jasper National Park, Alberta - Graduate Student, E A John	OPR	\$ 9,500	AERT
	Spatial Distribution in Communities of Saxicolous Lichens	OPR	\$ 15,000	NSERC
Denford, K E	Co-investigator with Gifford, D J: DNA Isolation and Subcellular Fractionation . . .			
	Chemosystematic Studies of Vascular Plants with Special Reference to their Biochemical Adaptation and the Role of Historical Factors in their Evolution	OPR	\$ 21,817	NSERC
	Professional Services to Describe the Status and the Origin of Cirsium minganense	CTR	\$ 7,532	PC
Gifford, D J	DNA Isolation and Subcellular Fractionation Using an Ultracentrifuge	EQP	\$ 61,025	NSERC
	Nature and Control of Storage Protein Mobilization in Pine Seeds	OPR	\$ 20,000	NSERC
Hickman, M	Aquatic Ecological, Paleoenvironmental and Algal Studies in Alberta	OPR	\$ 20,160	NSERC
Hoddinott, J	AFS Conductivity TTC Analysis on Hardened Roots/Shoots for Pine and Spruce	CTR	\$ 3,480	AF
	White Spruce Seedlings Research Project	CTR	\$ 13,970	AF
	Environmental and Nutritional Influences on Phloem Transport	OPR	\$ 17,977	NSERC
	Co-investigator with Taylor, G J: Basic and Applied Aspects of Aluminum . . .			
La Roi, G H	PRUF Program: Development of Lodgepole Pine and White Spruce Site Index Curves and Productivity - Site Relationships from Ecologically Classified Permanent Sample Plots in Western Alberta	CTR	\$ 15,391	EC
	Structure and Function of Boreal Forest Ecosystems	OPR	\$ 14,400	NSERC
Packer, J G	Taxonomic and Phytogeographical Studies in the Flora of Western Canada and the Arctic	OPR	\$ 4,800	NSERC
	Northern Supplement - Taxonomic and Phytogeographical Studies in the Flora of Western Canada and the Arctic	OPR	\$ 1,360	NSERC
	Co-investigator with Denford, K E: Professional Services to Describe . . .			
Stockey, R A	Cretaceous and Tertiary Plants from Western Canada	OPR	\$ 23,040	NSERC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Taylor, G J	Physiological Mechanisms of Aluminum Tolerance in Triticum Aestivum and Other Plants	OPR \$	17,280	NSERC
	Co-investigator with Gifford, D J: DNA Isolation and Subcellular Fractionation . . .			
	Basic and Applied Aspects of Aluminum and Manganese Tolerance in Canadian Wheat Cultivars	OPR \$	50,000	NSERC
Vitt, D H	Photographic Field Guide	OPR \$	27,145	EIC
	The Ecology and Systematics of Bryophytes, and the Characterization and Development of the Mire Ecosystem	OPR \$	40,320	NSERC
	Co-investigator with Prepas, E E (Zoology): Meanook Biological Research Station . . .			
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i> <i>Amount</i>
Contracts	4	\$ 40,373	NSERC	15 \$ 381,845
Equipment	1	\$ 61,025	Other Provincial	3 \$ 26,950
Operating	16	\$ 357,465	Other Federal	3 \$ 50,068
Total	21	\$ 458,863	Total	21 \$ 458,863
Department of Chemistry				
<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Armour, M A	Recycling and Disposal of Chemical Wastes	OPR \$	70,800	ACOH
	Development and Testing of Chemical Disposal Methods for Hazardous Pharmaceuticals	OPR \$	12,422	AERT
Ayer, W A	Lycopodium Alkaloids: Potential Therapeutic Agents for for the Treatment of Alzheimer's Disease	OPR \$	31,560	AMHAC
	Investigation of American Leaf Spot Disease - Joint Application with the University of Costa Rica	TTR \$	48,600	IDRC
	Editorial Support Services - To Cover the Cost of Editorial Support Services and Incidental Expenses Incurred by Dr W A Ayer as Editor of the Canadian Journal of Chemistry	CTR \$	60,000	NRC
	Structural and Synthetic Studies in Natural Products	OPR \$	77,426	NSERC
	Co-investigator with Jordan, R B: Alberta High Field NMR Centre . . .			
	Co-investigator with Kotovych, G: Upgrade of the 400 MHz High-field . . .			
	Phytochemical Investigation of Important Forest Diseases. Blue Stain Fungi Associated with the Mountain Pine Beetle	OPR \$	67,000	NSERC
Bertie, J E	Vibrational Spectroscopy, Optical and Dielectric Constants	OPR \$	38,399	NSERC
Birss, F W	Molecular Spectroscopy and Structure	OPR \$	23,071	NSERC
Brown, R S	Physical Organic Studies of Hydrolysis Reactions, Electrophilic Halogenation and Enzyme Models	OPR \$	50,305	NSERC
	Design, Synthesis and Study of Biomimetic Catalysts for Organophosphate Ester Hydrolysis	CTR \$	72,605	USDA
Browne, L M	Co-investigator with Armour, M A: Recycling and Disposal of Chemical . . .			
	Co-investigator with Ayer, W A: Investigation of American Leaf . . .			
Cantwell, F F	Liquid Chromatography, Ion Exchange and Solvent Extraction	OPR \$	49,345	NSERC
Cavell, R G	SIMS Study of Surface Adsorption on Minerals	CTR \$	33,510	AOSTR
	Synthetic Inorganic Chemistry and Electron Spectroscopy	OPR \$	45,842	NSERC
Clarke, B L	Stability, Dynamics and Chaos in Complex Chemical Networks	OPR \$	16,320	NSERC
Clive, D L J	Studies in Methodology and Natural Products Synthesis	OPR \$	38,061	NSERC
	Co-investigator with Kotovych, G: Upgrade of the 400 MHz High-field . . .			
	Co-investigator with Jordan, R B: Alberta High Field NMR Centre . . .			
Cowie, M	Co-investigator with Graham, W A G: Fourier Transform Infrared Spectrometer . . .			
	Co-investigator with Jordan, R B: Alberta High Field NMR Centre . . .			
	Metal-Metal Cooperativity in Small Molecule Activation and Catalysis	OPR \$	40,129	NSERC
Crawford, R J	Mass Spectrometry Service Laboratory	INF \$	28,800	NSERC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Dovich, N				
	Mode-Locked Argon Ion Laser	EQP \$	84,400	NSERC
	Laser-Based Sub-Nanoliter Analysis	OPR \$	38,399	NSERC
Dunford, H B				
	Co-investigator with Westlake, D W (Microbiology): Technical Support for Fermentation . . .			
	Heme Enzyme Mechanisms, Oxygen Activation in Biology	OPR \$	45,368	NSERC
Fraga, S				
	Accurate Theoretical Prediction of the Energy Levels of Atoms and Their Positive Ions -	OPR \$		NSERC
	Awarded 40 hours Vector Computer Access			
	Structure and Interactions	OPR \$	25,109	NSERC
Freeman, G R				
	Electrons in Fluids, Radiation Chemistry	OPR \$	57,698	NSERC
	Co-investigator with Crawford, R J: Mass Spectrometry Service Laboratory . . .			
Graham, W A G				
	Organometallic Chemistry and C-H Activation	OPR \$	76,799	NSERC
	Co-investigator with Jordan, R B: Alberta High Field NMR Centre . . .			
	Fourier Transform Infrared Spectrometer and Upgrade Package	EQP \$	14,500	NSERC
	Co-investigator with Kotovych, G: Upgrade of the 400 MHz High-field . . .			
Harrison, D J				
	Investigations of Internal Potentials and Concentration Profiles within Ion Specific	OPR \$	17,000	CIBAC
	Membranes			
	Membranes and Chemically Sensitive Devices	OPR \$	24,000	NSERC
	Co-investigator with Baltes, H P (Engineering, Electrical Engineering): Integrated Sensors on			
	Silicon . . .			
	Spatially Resolved Absorption Spectrometer for Membrane Studies	EQP \$	22,406	NSERC
	Co-investigator with Baltes, H P (Engineering, Electrical Engineering): Spectrophotometer			
	and Microcomputer . . .			
	Spectroscopic Analysis of Concentration Profiles Within Membranes	OPR \$	25,000	NSERC
	Co-investigator with Baltes, H P (Engineering, Electrical Engineering): Organic Film			
	Preparation for Integrated . . .			
	Sub-contract: To Evaluate Ion-selective Field Effect Transistors	CTR \$	7,140	UVIC
Hepler, L G				
	Thermodynamics and Colloid Science Applied to Oil Sands	CTR \$	117,180	AOSTR
	Chemical Thermodynamics	OPR \$	50,879	NSERC
Hindsgaul, O				
	Biological Functions of Complex Carbohydrates	OPR \$	19,200	NSERC
	Medium-Pressure Chromatography System	EQP \$	16,525	NSERC
	Co-investigator with Jordan, R B: Alberta High Field NMR Centre . . .			
	Development of ELISA Assays for Glycosyltransferases	OPR \$	42,400	NSERC
	Co-investigator with Kotovych, G: Upgrade of the 400 MHz High-field . . .			
Hogg, A M				
	Co-investigator with Kebarle, P: Instrumental and Analytical Methodology . . .			
Horlick, G				
	Development and Application of Methods and Systems for Spectrochemical Analysis	OPR \$	54,883	NSERC
	Co-investigator with Kebarle, P: Instrumental and Analytical Methodology . . .			
Huzinaga, S				
	Support of Symposium on Computational Chemistry and Parallel Processors	OPR \$	4,000	ATRT
	Computational Study of Electronic Properties of Molecules	OPR \$	41,279	NSERC
Jordan, R B				
	Ligand Substitution and Electron Transfer Mechanisms of Transition Metal Complexes	OPR \$	42,264	NSERC
	Alberta High Field NMR Centre	INF \$	38,400	NSERC
Kalantar, A H				
	Triplet State Spectroscopy, Kinetics and Energy Transfer	OPR \$	11,847	NSERC
Kebarle, P				
	Gas Phase Ion Chemistry - Relationships With Ions in Solution	OPR \$	106,241	NSERC
	Instrumental and Analytical Methodology Development of the SCIEX TAGA 6000 Mass	TTR \$	202,080	NSERC
	Spectrometer			
Keil, M				
	Energy Disposal in the Photodissociation of van der Waals Molecules	OPR \$	12,000	ACS
	Inter-and Intra-molecular Energy Transfer, Reactions of Weakly-Bound Molecules	OPR \$	21,120	NSERC
Kopecky, K R				
	Studies in Chemiluminescence, Orbital Interactions, Ester Hydrolysis and Polymerization	OPR \$	18,554	NSERC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Kotovych, G	High-Field NMR Studies of Biological Systems	OPR	\$ 21,120	NSERC
	Co-investigator with Jordan, R B: Alberta High Field NMR Centre . . .			
	Co-investigator with Kotovych, G: Upgrade of the 400 MHz High-field . . .			
	Upgrade of the 400 MHz High-field NMR Cryospectrometer	EQP	\$ 283,350	NSERC
Kratochvil, B	Evaluation of Homogeneity of Freeze-Dried Marine Sediment Reference Material	CTR	\$ 21,650	NRC
	New Sampling and Ion Speciation Methods for Chemical Analysis	OPR	\$ 39,359	NSERC
Lemieux, R U	Biological Recognition at the Molecular Level	OPR	\$ 117,720	NSERC
	Co-investigator with Jordan, R B: Alberta High Field NMR Centre . . .			
	Co-investigator with Kotovych, G: Upgrade of the 400 MHz High-field . . .			
Liu, H J	(1) Development of Organic Synthetic Methods. (2) Synthetic Studies on Natural Products.	OPR	\$ 42,239	NSERC
	Co-investigator with Jordan, R B: Alberta High Field NMR Centre . . .			
Lown, J W	Mode of Action of Antitumor Antibiotics	OPR	\$ 67,863	NCI
	DNA Sequence Specific Anticancer and Antiviral Agents	OPR	\$ 67,000	NSERC
	Co-investigator with Kotovych, G: Upgrade of the 400 MHz High-field . . .			
	Synthetic and Mechanistic Research in the Fields of Heterocyclic and Antibiotic Chemistry	OPR	\$ 67,038	NSERC
	The Mechanism of Antitumor Action of Nitrosoureas	OPR	\$ 39,298	USNIH
McClung, R E D	Co-investigator with Kotovych, G: Upgrade of the 400 MHz High-field . . .			
	Two Dimensional NMR Spectroscopy	OPR	\$ 27,840	NSERC
	Co-investigator with Jordan, R B: Alberta High Field NMR Centre . . .			
Nakashima, T T	Co-investigator with Kotovych, G: Upgrade of the 400 MHz High-field . . .			
Robins, M J	Compounds Related to Nucleic Acids	OPR	\$ 67,842	NSERC
Strausz, O P	The Role of Sulfur in Alberta Crude Oils, as Related to Production, Upgrading, and Oxidation	CTR	\$ 85,000	AOSTR
	Characterization of the Olefins Present in Athabasca Bitumen and the Cretaceous Heavy Oils of Alberta	CTR	\$ 75,000	AOSTR
	Chemical Studies on Resins and Asphaltenes Related to the Thermal Changes Occurring During In Situ Oil Production	CTR	\$ 170,000	AOSTR
	Fundamental Studies in Petroleum, Free Radical- and Photochemistry	OPR	\$ 43,200	NSERC
	Co-investigator with Crawford, R J: Mass Spectrometry Service Laboratory . . .			
Takats, J	Organometallic Complexes of the Transition Metals and f-Elements	OPR	\$ 33,600	NSERC
	Co-investigator with Kotovych, G: Upgrade of the 400 MHz High-field . . .			
	Co-investigator with Jordan, R B: Alberta High Field NMR Centre . . .			
	Co-investigator with Graham, W A G: Fourier Transform Infrared Spectrometer . . .			
Tanner, D D	Electron Paramagnetic Resonance Spectrometer	EQP	\$ 114,580	NSERC
	Studies on the Mechanism of Free Radical Reactions	OPR	\$ 41,280	NSERC
	Co-investigator with Crawford, R J: Mass Spectrometry Service Laboratory . . .			
Thorson, W R	Studies in Theoretical Chemistry: (1) Atomic Collision Theory (2) Vibrational Dynamics	OPR	\$ 32,640	NSERC
Vederas, J C	Co-investigator with Kotovych, G: Upgrade of the 400 MHz High-field . . .			
	Co-investigator with Crawford, R J: Mass Spectrometry Service Laboratory . . .			
	Freeze-drying System	EQP	\$ 16,502	NSERC
	Co-investigator with Westlake, D W (Microbiology): Technical Support for Fermentation . . .			
	Mechanism of Polyketide Biosynthesis	OPR	\$ 40,319	NSERC
	Co-investigator with Jordan, R B: Alberta High Field NMR Centre . . .			
Weir, G L	Co-investigator with Armour, M A: Recycling and Disposal of Chemical . . .			

<i>Type of Award</i>	<i>No.</i>	<i>Amount</i>	<i>Source of Funds</i>	<i>No.</i>	<i>Amount</i>
Contracts	9	\$ 642,085	NSERC	51	\$ 2,609,678
Equipment	7	\$ 552,263	Other Provincial	9	\$ 599,472
Infrastructure	2	\$ 67,200	Other Federal	3	\$ 130,250
Operating	49	\$ 2,043,078	Other Agencies	6	\$ 215,906
Technology Transfer	2	\$ 250,680	Total	69	\$ 3,555,306
Total	69	\$ 3,555,306			

Department of Computing Science

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Armstrong, W W	Miscellaneous Experiments in Computing	OPR \$	18,197	NSERC
	Co-investigator with Marsland, T A: Distributed Computing Research . . .			
	Co-investigator with Green, M W: Motion Display Laboratory . . .			
Cabay, S	Algebraic Algorithms	OPR \$	11,950	NSERC
	Co-investigator with Marsland, T A: Distributed Computing Research . . .			
Chan, E P	Schema Analysis Under the Weak Instance Model	OPR \$	14,484	NSERC
Culberson, J C	The Effect of Deletions and Insertions on Search Trees	OPR \$	15,000	NSERC
Davis, W A	Co-investigator with Marsland, T A: Distributed Computing Research . . .			
	Digital Techniques in Image Processing	OPR \$	22,940	NSERC
Dobosiewicz, W	Design of Fast Algorithms for Search Tree Manipulation	OPR \$	12,285	NSERC
Elio, R E	Interdisciplinary Research on Knowledge-based Systems Representations	OPR \$	19,000	NSERC
	Co-investigator with Marsland, T A: Distributed Computing Research . . .			
Green, M W	User Interfaces and Computer Animation	OPR \$	17,997	NSERC
	Co-investigator with Marsland, T A: Distributed Computing Research . . .			
	Motion Display Laboratory	EQP \$	65,207	NSERC
Marsland, T A	Distributed Systems Studies	OPR \$	29,535	NSERC
	Co-investigator with Schaeffer, J: Expansion of Facilities for Experimenting . . .			
	Distributed Computing Research Group	INF \$	66,240	NSERC
Ozsu, M T	Analysis and Design of Distributed Database Systems. Operating System Support for Distributed Databases	OPR \$	13,797	NSERC
	Co-investigator with Marsland, T A: Distributed Computing Research . . .			
Pelletier, F J	Natural Language Understanding and Heuristic Theorem Proving	OPR \$	17,280	NSERC
	Co-investigator with Marsland, T A: Distributed Computing Research . . .			
Schaeffer, J	Tree Searching on a Multi-Processor System	OPR \$	17,000	NSERC
	Expansion of Facilities for Experimenting with Parallel Programs	EQP \$	15,981	NSERC
Schubert, L K	Language Understanding, Question-Answering, and Robotics	OPR \$	25,066	NSERC
	Co-investigator with Marsland, T A: Distributed Computing Research . . .			
Szafron, D A	The Effects of Graphical User Interfaces on Programming Environments	OPR \$	10,000	NSERC
	Co-investigator with Marsland, T A: Distributed Computing Research . . .			
Tartar, J	Investigation of Interactive and Distributed Computer Systems	OPR \$	25,406	NSERC
	Co-investigator with Marsland, T A: Distributed Computing Research . . .			
White, L J	Research in Computer Program Testing	OPR \$	27,950	NSERC
	Co-investigator with Marsland, T A: Distributed Computing Research . . .			

Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Equipment	2	\$ 81,188	NSERC	19	\$ 445,315
Infrastructure	1	\$ 66,240			
Operating	16	\$ 297,887			
Total	19	\$ 445,315			

Department of Genetics

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Ahmed, A	Mechanism of DNA Transposition in E Coli	OPR \$	34,656	NSERC
Bell, J B	Isolation of Informational Supressors in Drosophila melanogaster and tRNA Nucleoside Modification Deficient Mutants in Saccharomyces cerevisiae	OPR \$	20,000	NSERC
Hastings, P J	Repair, Spontaneous Mutation and Recombination in Yeast	OPR \$	34,464	NSERC
Hodgetts, R B	Molecular Basis of the Response to Selection for Increased Body Weight	OPR \$	16,000	AART
	Hormonal Aspects of the Regulation of Gene Expression in Drosophila	OPR \$	32,544	NSERC
Kuspira, J	Cytogenetic Studies of the A Genome in Triticum	OPR \$	20,301	NSERC
Morgan, K	Analyses of Population and Genealogical Structure: Multiple-locus Associations, Segregation, and Gene Descent	OPR \$	7,977	NSERC
Nargang, F E	Co-investigator with Dean (Agriculture and Forestry): Genetic Variation and Adaptation . . . Mitochondrial Gene Expression in Neurospora crassa	OPR \$	29,438	NSERC
Nash, D	Genetic and Molecular Studies on Genes Affecting Purine Metabolism in Drosophila	OPR \$	39,360	NSERC
Reha-Krantz, L J	Co-investigator with Westlake, D W (Microbiology): Technical Support for Fermentation . . . Studies on the Biochemical Basis of Mutation	OPR \$	29,760	NSERC
Russell, M A	Genetic Control of Developmental Pathways in Drosophila	OPR \$	32,640	NSERC
Tyler, J M	Molecular Cloning and Analysis of Human Erythrocyte Spectrin	OPR \$	10,375	MRC
von Borstel, R C	13th International Conference on Yeast Genetics, to be held in Banff, Alberta, Aug 31-Sep 9/86	CFC \$	30,000	AHFMR
	Origin of Spontaneous Mutations	OPR \$	46,560	NSERC
	13th International Conference on Yeast Genetics and Molecular Biology Banff, Alberta	CFC \$	6,000	NSERC
	Molecular Analysis of Mutation Spectra Induced by "Nonmutagenic" Carcinogens and Alkylating Agents	OPR \$	73,912	NSERC
Weijer, J	Seed Production of Native Grasses 86 Research Contract Western Region	CTR \$	34,800	DINA

Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	2	\$ 36,000	AHFMR	1	\$ 30,000
Contracts	1	\$ 34,800	MRC	1	\$ 10,375
Operating	14	\$ 427,987	NSERC	13	\$ 407,612
Total	17	\$ 498,787	Other Provincial	1	\$ 16,000
			Other Federal	1	\$ 34,800
			Total	17	\$ 498,787

Department of Geography

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Campbell, I A	Erosion Rates, Sediment Delivery Ratios and the Evolution of the Red Deer Badlands	OPR \$	12,480	NSERC
England, J	Climatic and Environmental Change in the Canadian High Arctic	CTR \$	14,445	EC
	Quaternary Glaciation, Glacio-Isostasy and Paleoenvironmental Change, Northern Ellesmere Island	OPR \$	23,040	NSERC
Eyton, R	Co-investigator with Muller, J C: Digital Terrain Modelling Techniques . . .			
Kershaw, G P	Studies of Environmental Effects of Disturbances in the Subarctic (SEEDS)	CTR \$	39,143	AGCA
Lozowski, E P	The vertical gradient of sea spray concentration	OPR \$	9,992	EC
	Icing Research for Marine Applications	OPR \$	19,920	NSERC
	Co-investigator with Gates, E M (Engineering, Mechanical Engineering): Marine Icing . . .			
Muller, J C	Digital Terrain Modelling Techniques and Fractal Dimension	OPR \$	24,000	NSERC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Reinelt, E R					
	Development of a Climatology of Atmospheric Conditions Related to Extreme Forest Fire Behaviour in West-Central and Northern Canada - Part of the Program of Research by Universities in Forestry	CTR \$	15,168	AGCA	
Wilson, J D					
	Co-investigator with Lozowski, E P: The vertical gradient of sea spray . . . Flow Through a Shelterbelt	OPR \$	14,000	NSERC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Contracts	3	\$ 68,756	NSERC	5	\$ 93,440
Operating	6	\$ 103,432	Other Federal	4	\$ 78,748
Total	9	\$ 172,188	Total	9	\$ 172,188

Department of Geology

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Baadsgaard, H	Geochronometric Analyses on Various Rock and Mineral Specimens	CTR \$	11,835	DINA
	Isotope Geology of: Selected Crustal Areas, Time-scale Horizons, Uranium Mineralisation and Potash Salt Deposition	OPR \$	41,280	NSERC
Burwash, R A	Western Canada Basin Heat Generation Data Base	OPR \$	5,500	EMRC
Chamberlain, V E	Age Dating of Paleomagnetically Analysed Early Proterozoic Rocks of the Slave Province	OPR \$	3,500	EMRC
Chatterton, B D	Conodont Biostratigraphy and Paleoecology of the Famennian Palliser Formation and Subsurface Equivalents, Alberta and British Columbia	OPR \$	5,500	EMRC
	Taxonomic, Paleoecologic, Biostratigraphic and Biogeographic Studies of Paleozoic Trilobite and Conodont Faunas of Canada	OPR \$	27,840	NSERC
	Systematics, Biostratigraphy, Paleoecology & Paleogeography of Ordovician-Devonian Trilobites and Conodonts	OPR \$	6,100	NSERC
Cruden, D M	The Stability of Natural Slopes in Rock	OPR \$	28,800	NSERC
Erdmer, P	Tectonic and Geochronological Studies in the Northern Long Range Mountains, Newfoundland	CTR \$	19,434	EMRC
	Structural and Metamorphic Analysis of Allochthonous Terranes of Central Yukon	OPR \$	11,520	NSERC
	Northern Supplement - Structural and Metamorphic Analysis of Allochthonous Terranes of Central Yukon	OPR \$	6,500	NSERC
Fox, R C	Upper Cretaceous and Paleocene Tetrapods from Western Canada	OPR \$	39,446	NSERC
Hein, F J	Co-investigator with Pemberton, S G: Ichonology of the Precambrian-Cambrian . . . Basin Analysis: Shelf and Slope Deposits, Active and Passive Margins	OPR \$	14,600	NSERC
Johnston, D I	Co-investigator with Chatterton, B D: Conodont Biostratigraphy and Paleoecology . . .			
Jones, B	Diagenetic Regimes Associated with Unconformities in Carbonate Sequences	OPR \$	34,066	NSERC
Lambert, R S J	Isotopic Studies Related to the Evolution of the Cordillera and the Mantle	OPR \$	34,066	NSERC
Longstaffe, F J	Diagenesis Study of Elmworth - Graduate Student Barbara Tilley	OPR \$	5,000	CHEL
	Subcontract for Stable Isotope Analyses and Costs Related to These Analyses - Mr G Lynch	CTR \$	20,000	DINA
	Geochemical Modelling of Clay Diagenesis in Clastic Sedimentary Rocks due to Fluid Mixing	OPR \$	8,000	IOL
	Physicochemical Investigations of Water-Rock Interaction in Low Temperature Environments	OPR \$	35,606	NSERC
Morton, R D	Co-investigator with Smith, D G W: Economic Geology Evaluations of . . . Mineralogical and Geochemical Studies on the Dawn Lake Uranium Deposit, Saskatchewan	OPR \$	11,680	NSERC
Muehlenbachs, K	Coal Research Grant Program - Isotopic Studies on Coal-Bitumen Co-processing Schemes	OPR \$	31,000	AENR
	Oxygen Isotope Analyses	CTR \$	4,960	EMRC
	Quantitative Determination of Coal and Bitumen Derived Materials in Coprocessing	CTR \$	3,000	EMRC
	Distillates and Residues by Isotopic Mass Balance Calculations			
	Stable Isotope Exchange Studies and their Application to Geological Problems	OPR \$	26,400	NSERC
	Co-investigator with Scarfe, C M: High-pressure Apparatus for Research . . .			

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Nesbitt, B E	Evaluation of the Origin of Mesothermal Gold-Quartz Veins of the Canadian Cordillera	OPR \$	7,000	EMRC
	Metamorphism and Genesis of Base and Precious Metal Deposits	OPR \$	16,800	NSERC
Pemberton, S G	Ichnological Microdynamics of the Athabasca Oil Sands: An Integrated Surface and Subsurface Study	CTR \$	60,234	AOSTR
	Ichonology of the Precambrian-Cambrian Boundary: The Miette - Gog Transition Mount Robson Area	OPR \$	6,000	EMRC
	Ichnology of Storm and Tidal Dominated Sequences	OPR \$	24,000	NSERC
Rutter, N W	Geochronological Analysis of Beaufort Sea Region Sediment Samples	CTR \$	62,298	EMRC
	Determination of Amino Acid Ratios on Archived Samples of Wood from the Timmins Area	CTR \$	3,900	EMRC
	Amino Acid Dating Techniques	OPR \$	36,000	NSERC
Scarfe, C M	The Kinetics of Calcite and Dolomite Dissolution in Aqueous Solutions at High Temperatures	CTR \$	37,865	AOSTR
	Physical and Chemical Properties of Silicate Melts of Geological Interest	OPR \$	25,440	NSERC
	High-pressure Apparatus for Research in Geochemistry and Geophysics	EQP \$	521,899	NSERC
Schwartz, F W	Development and Application of an Expert System in Contaminant Hydrogeology	OPR \$	7,400	AERT
	Exchange Processes and Mass Transport in Groundwater Systems	OPR \$	38,400	NSERC
Smith, D G W	Economic Geology Evaluations of the N-81 Orebody, Pine Point Mines Ltd	CTR \$	10,000	DINA
	Applications of the Electron Microprobe in Mineralogy, Petrology and Meteoritics	OPR \$	40,800	NSERC
	Search for Meteorites on Canadian Arctic Ice Caps	OPR \$	2,000	NSERC
	Co-investigator with Egerton, R F (Physics): Transmission Electron Microscope . . .			
Toth, J	Development of a Hydrogeological Approach to Petroleum Exploration	OPR \$	105,020	NSERC

Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	10	\$ 233,527	NSERC	22	\$ 1,128,263
Equipment	1	\$ 521,899	Other Provincial	4	\$ 136,499
Operating	30	\$ 685,264	Other Federal	13	\$ 162,928
Total	41	\$ 1,440,690	Other Agencies	2	\$ 13,000
			Total	41	\$ 1,440,690

Department of Linguistics

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Dryer, M S	A Statistical Study of Word Order Universals	OPR \$	4,520	SSHRC
Nearey, T M	Joint Research - NSERC/Strategic Grant G1854 Speech research environment (with D G Jamieson, University of Calgary \$20,000.00)	OPR		NSERC
	Voicing Contrasts in French and English	OPR \$	7,657	SSHRC
Rochet, B	Co-investigator with Nearey, T M: Voicing Contrasts in French and . . .			
Operating		SSHRC	2 \$	12,177

Department of Mathematics

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Abbott, H L	Extremal Problems in Number Theory and Combinatorics	OPR \$	11,185	NSERC
Aiello, W	Co-investigator with Antonelli, P L: Personal Computer - SUN-3/52 plus . . .			
Al-Salam, W	Sieved Orthogonal Polynomials, Basic Series, Geronimus Orthogonal Polynomials	OPR \$	17,856	NSERC
	Constructive Function Theory'86, University of Alberta	CFC \$	9,060	NSERC
Allegretto, W	Behaviour of the Solutions and of the Spectrum of Differential Operators	OPR \$	15,325	NSERC
Allison, B N	Nonassociative Algebras and Constructions of Lie Algebras	OPR \$	8,035	NSERC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Andersen, K F	Weighted Inequalities for Integral Operators	OPR \$	5,747	NSERC
Antonelli, P L	Some Problems in Population Biology and Physics	OPR \$	12,934	NSERC
	Personal Computer - SUN-3/52 plus Printer (i.e. SUN-3/50 plus External 71MB.Disc and IBM Porprinter with Floating Point accltr)	EQP \$	17,000	NSERC
Brungs, H H	Chain Rings	OPR \$	8,621	NSERC
Butler, G J	Mathematical Models of Ecosystems; Oscillation Theory; Bifurcation Theory	OPR \$	18,641	NSERC
Cliff, G	Group Rings and their Representations	OPR \$	8,035	NSERC
Ditzian, Z	Moduli of Smoothness, K-functional and Rate of Approximation	OPR \$	18,641	NSERC
	Co-investigator with Al-Salam, W: Constructive Function Theory'86, . . .			
Erbe, L H	Oscillation Theory and Boundary Value Problems	OPR \$	19,157	NSERC
Fields, J L	Rational and Asymptotic Approximations	OPR \$	3,728	NSERC
Freedman, H I	Periodicity, Stability, and Population Ecology	OPR \$	12,454	NSERC
Hoo, C S	Implicative Semilattices	OPR \$	5,357	NSERC
Kharaghani, H	The Excess of Hadamard Matrices	OPR \$	5,000	NSERC
Klamkin, M S	Mathematical Modelling, Geometric Inequalities	OPR \$	6,517	NSERC
Kunze, H P	Relativistic Versus Nonrelativistic Classical Physical Theories	OPR \$	7,296	NSERC
Lau, A T M	Subspaces of the Left Regular Representation and Amenability	OPR \$	15,325	NSERC
Liu, C F A	Extremal Problems in Hypergraphs and Geometry	OPR \$	5,747	NSERC
Ludwig, G	Exact Solutions in General Relativity	OPR \$	5,747	NSERC
Macki, J W	Applications of Nonsmooth Analysis in Control Theory & Game Theory/Qualitative Theory for ODE.	OPR \$	5,592	NSERC
Meir, A	(1) Lacunary Spline Approximation (2) Average Branch Size of Rooted Trees	OPR \$	20,505	NSERC
Millar, R F	The Rayleigh Hypothesis and Inverse Scattering for the Helmholtz Equation	OPR \$	8,035	NSERC
Moodie, T B	Linear and Nonlinear Waves in Haemodynamics, Fracture, and Thermoelasticity	OPR \$	18,749	NSERC
Moon, J W	Research in Graph Theory	OPR \$	2,208	NSERC
Muldowney, J S	Qualitative Theory of Differential Equations	OPR \$	6,174	NSERC
Oguztoreli, M N	Modelling, Analysis and Simulation of Certain Scientific and Industrial Problems	OPR \$	12,480	NSERC
Pounder, J R	Stability Study of Nonlinear Recurrence Relations	OPR \$	2,500	NSERC
Rhemtulla, A H	Groups of Finite Rank	OPR \$	15,325	NSERC
Riemenschneider, S D	Approximation of Functions of One and Several Variables	OPR \$	18,641	NSERC
	Co-investigator with Al-Salam, W: Constructive Function Theory'86, . . .			
Rogers, T D	Discrete Dynamical Systems	OPR \$	7,142	NSERC
Sabbarao, M V	Studies in Arithmetic Functions and Partition Theoretic Problems	OPR \$	14,285	NSERC
Scherk, J	Invariants of Isolated Singularities	OPR \$	434	NSERC
Sehgal, S K	Studies in Group Rings	OPR \$	22,080	NSERC
Sharma, A	Cardinal Spline Interpolation and Interpolatory Function Theory	OPR \$	23,301	NSERC
Tait, R J	Fluid Flow in Linear and Nonlinear Elastic and Viscoelastic Tubes	OPR \$	14,285	NSERC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Timourian, J G	Singularity Theory and Partial Differential Equations	OPR	\$ 10,714	NSERC
Tomczak-Jaegermann, N	Geometry and Numerical Characteristics of Banach Spaces	OPR	\$ 15,325	NSERC
Weiss, A R	(1) Arithmetic of Special Orders (2) Analytic Theory of Number Fields	OPR	\$ 9,600	NSERC
Wolkowicz, H	Numerical Solutions of Ill-posed Problems	OPR	\$ 195	NSERC
Wong, Y S	Computational Fluid Dynamics: High-order Numerical Solutions for Partial Differential Equations	OPR	\$ 9,648	NSERC
Zeidan, V	Necessary and Sufficient Conditions for Optimization and General Control Problems	OPR	\$ 9,388	NSERC
Zizler, V	Renorming Theory of Banach Spaces and its Applications	OPR	\$ 11,185	NSERC

Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	1	\$ 9,060	NSERC	45	\$ 495,199
Equipment	1	\$ 17,000			
Operating	43	\$ 469,139			
Total	45	\$ 495,199			

Department of Microbiology

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Fedorak, P M	Attenuation of Cyanide Toxicity Prior to Methanogenic Treatment of Phenolic Wastewaters	OPR	\$ 8,000	IOL
	Co-investigator with Huck, P M (Engineering, Civil Engineering): Use of Biological Processes in . . .			
	Co-investigator with Hrukey, S E (Engineering, Civil Engineering): Role of Support Media in Enhancing . . .			
	Co-investigator with Hrukey, S E (Engineering, Civil Engineering): Environmental Process BioTechnology . . .			
	Anaerobic Degradation of m-cresol by a Methanogenic Consortium	OPR	\$ 13,440	NSERC
Jensen, S E	Co-investigator with Westlake, D W: Collaborative Study with Dr. Wolfe, . . .			
	Production of Beta Lactam Antibiotics in Streptomyces clavuligerus	OPR	\$ 27,696	NSERC
	Co-investigator with Westlake, D W: Technical Support for Fermentation . . .			
	Fast Protein Liquid Chromatograph	EQP	\$ 36,947	NSERC
Page, W J	Iron and Molybdenum Accumulation in Azotobacter vinelandii	OPR	\$ 35,438	NSERC
	Co-investigator with Westlake, D W: Technical Support for Fermentation . . .			
Pickard, M A	Co-investigator with Dederich, D N (Dentistry, Restorative Dentistry): Laser Applications in Endodontic . . .			
	Co-investigator with Westlake, D W: Editorial Support Services - To . . .			
	Co-investigator with Westlake, D W: Technical Support for Fermentation . . .			
	Fungal Metabolites of Applied Potential	OPR	\$ 22,260	NSERC
Roy, K L J	Cloned Human tRNA Genes	OPR	\$ 20,160	NSERC
Stemke, G W	Development of a Serodiagnosis for Porcine Mycoplasma Pneumonia	OPR	\$ 41,525	ARCA
Taylor, D E	Genetic Studies of Campylobacters with Special Reference to Mechanisms of Tetracycline and Erythromycin Resistance	OPR	\$ 33,438	NSERC
	Cloning of Campylobacter jejuni Genes for Use as Diagnostic DNA Probes	OPR	\$ 41,120	NSERC
von Tigerstrom, R G	RNA-Degrading Enzymes in Yeast. Extracellular Products of Lysobacter	OPR	\$ 21,452	NSERC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Westlake, D W					
	Unemcumbered Grant to be Used in Departmental Research Program	OPR \$	6,000	CHEM	
	Editorial Support Services - To Cover the Cost of Editorial Support Services and Incidental Expenses Incurred by Dr D W S Westlake and Dr M A Pickard as Editors of the Canadian Journal of Microbiology	CTR \$	50,000	NRC	
	Co-investigator with Crawford, R J (Chemistry): Mass Spectrometry Service Laboratory . . .				
	Collaborative Study with Dr. Wolfe, Queen's University: Microbiological Syntheses of Novel Beta-Lactam Compounds - \$101,840 (University of Alberta \$30,000.)	OPR		NSERC	
	Co-investigator with Prepas, E E (Zoology): Meanook Biological Research Station . . .				
	Co-investigator with Jensen, S E: Fast Protein Liquid Chromatograph . . .				
	Technical Support for Fermentation Plant	INF \$	22,080	NSERC	
	Microbial Metabolism of Natural Products	OPR \$	57,062	NSERC	
Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	1	\$ 50,000	NSERC	11	\$ 331,093
Equipment	1	\$ 36,947	Other Provincial	1	\$ 41,525
Infrastructure	1	\$ 22,080	Other Federal	1	\$ 50,000
Operating	12	\$ 327,591	Other Agencies	2	\$ 14,000
Total	15	\$ 436,618	Total	15	\$ 436,618

Department of Physics

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Abegg, R				
	Co-investigator with Hutcheon, D A: Neutron Capture at 0 Degrees . . .			
	Co-investigator with Greeniaus, L G: Charge Symmetry Breaking in n-p . . .			
	Co-investigator with Hutcheon, D A: Polarization Transfer to Deuteron . . .			
Adler, J G				
	Electron Tunneling Spectroscopy	OPR \$	45,408	NSERC
Cameron, J M				
	Co-investigator with Roy, G: Determination Of The Deuteron Charge . . .			
	Winter Institute on Electroweak Interactions, Lake Louise, February 15-21, 1987	CFC \$	9,000	NSERC
	University of Alberta-TRIUMF Research-Support Staff	OPR \$	368,845	NSERC
	Determination of the Deuteron Charge Form Factor Using a Deuteron Tensor Polarimeter	OPR \$	153,686	NSERC
	Co-investigator with Sheppard, D M: Q-Measurement on 40Ca at 1 GeV . . .			
	Co-investigator with McDonald, W J: Tagged Photon Induced Reaction . . .			
	Co-investigator with Hutcheon, D A: Neutron Capture at 0 Degrees . . .			
Campbell, B A				
	Superunification and Superstrings	OPR \$	17,000	NSERC
Capri, A Z				
	Solutions in Quantum Field Theory	OPR \$	19,100	NSERC
Cumming, G L				
	Inst of Earth & Planetary Physics - Support for Distinguished Visitors and Faculty Support for Specific Research and Application development - Seismic Forward and Inverse Modeling Techniques	OPR \$	10,000	AMOCO
	To Cover Operating Costs of the Edmonton Standard Seismograph Station of the Canadian National Network for Energy, Mines and Resources-Departmental Award	OPR \$	17,000	EMRC
	Systematics of Pb Isotopic Variations in Ores and Rocks-Crustal Seismic Studies	OPR \$	36,346	NSERC
Egerton, R F				
	Electron Energy-loss Spectrometry and Analytical Electron Microscopy	OPR \$	28,800	NSERC
	Transmission Electron Microscope	EQP \$	324,000	NSERC
Evans, M E				
	Quaternary Paleomagnetic and Archeomagnetic Investigations	OPR \$	34,560	NSERC
Franck, J P				
	Properties of Quantum Solids	OPR \$	33,600	NSERC
Gortel, Z				
	Desorption Kinetics Surface States and Adsorption on Semiconductors	OPR \$	10,560	NSERC
Gough, D I				
	Magnetovariation, Magnetotelluric and Paleomagnetic Studies	OPR \$	64,320	NSERC
Gray, J				
	Stable Isotope Studies of Tree Rings, Peat and Cave Deposits to Determine Past Climate in Canada	OPR \$	9,600	NSERC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Green, P W				
	Co-investigator with Moss, G A: Ratio of Spin Transfer Parameters . . .			
	University of Alberta VAX Computer Facility	INF \$	27,763	NSERC
	Co-investigator with Greeniaus, L G: Charge Symmetry Breaking in n-p . . .			
	Co-investigator with Moss, G A: Measurement of the n-p Spin Correlation . . .			
	Co-investigator with Hutcheon, D A: Polarization Transfer to Deuteron . . .			
Greeniaus, L G				
	Co-investigator with Moss, G A: Ratio of Spin Transfer Parameters . . .			
	Co-investigator with Hutcheon, D A: Neutron Capture at 0 Degrees . . .			
	Charge Symmetry Breaking in n-p Elastic Scattering at 350 MeV	OPR \$	29,746	NSERC
	Co-investigator with Hutcheon, D A: Polarization Transfer to Deuteron . . .			
	Co-investigator with Moss, G A: Measurement of the n-p Spin Correlation . . .			
Hron, F				
	Numerical Modelling of Seismic Waves in Complex Geological Structures	OPR \$	31,680	NSERC
Hube, D P				
	Photometric and Spectroscopic Studies of Early Type Stars	OPR \$	10,176	NSERC
Hughes, D G				
	Nuclear Magnetic Resonance in Solids and Biological Materials	OPR \$	18,048	NSERC
Hutcheon, D A				
	Polarization Transfer to Deuteron	OPR \$	13,733	NSERC
	Neutron Capture at 0 Degrees	OPR \$	35,596	NSERC
Israel, W				
	Strong Gravitational Fields	OPR \$	42,912	NSERC
Jones, F W				
	Study of Temperature Data from Canadian Sedimentary Basins	CTR \$	29,000	EMRC
	Electromagnetic Induction, Heat Flow, and Earth Tides and Tilts	OPR \$	26,880	NSERC
Kamal, A N				
	Theoretical Particle Analysis	OPR \$	29,400	NSERC
Kanasewich, E R				
	Seismic Tomography in Steam Injection Projects	CTR \$	185,000	AOSTR
	Reprocessing and Preliminary Interpretation of Selected Industry Acquired Regional Seismic Reflection Data from Melville Island	CTR \$	25,650	EMRC
	Analysis of Cold Lake Seismic Tomographic Studies in Steam Injection Projects and Analysis of Cold Lake Seismicity	OPR \$	8,000	IOL
	Geophysical Investigation of the Crust and Mantle	OPR \$	66,133	NSERC
Kernahan, J A				
	Co-investigator with Pinnington, E H: Spectroscopic Studies of Atomic . . .			
Khanna, F C				
	Role of Non-nucleon Degrees of Freedom in Nuclei	OPR \$	30,720	NSERC
Kitching, P				
	Co-investigator with Cameron, J M: University of Alberta-TRIUMF Research-Support . . .			
	Proton-Proton Bremsstrahlung	OPR \$	17,847	NSERC
Matsumoto, H				
	Superconductivity and Magnetism	OPR \$	23,600	NSERC
McDonald, W J				
	Co-investigator with Roy, G: Measurement of Parity Violation . . .			
	Co-investigator with Cameron, J M: Determination of the Deuteron Charge . . .			
	Tagged Photon Induced Reaction	OPR \$	64,449	NSERC
	Co-investigator with Moss, G A: Measurement of the n-p Spin Correlation . . .			
	Co-investigator with Cameron, J M: University of Alberta-TRIUMF Research-Support . . .			
	Co-investigator with Greeniaus, L G: Charge Symmetry Breaking in n-p . . .			
Miller, C A				
	Co-investigator with Greeniaus, L G: Charge Symmetry Breaking in n-p . . .			
	Co-investigator with Moss, G A: Measurement of the n-p Spin Correlation . . .			
	Co-investigator with Hutcheon, D A: Neutron Capture at 0 Degrees . . .			
	Co-investigator with Roy, G: Measurement of Parity Violation . . .			
Moss, G A				
	Co-investigator with Hutcheon, D A: Polarization Transfer to Deuteron . . .			
	Ratio of Spin Transfer Parameters in Dt/Rt in n-p Scattering	OPR \$	6,941	NSERC
	Co-investigator with Cameron, J M: University of Alberta-TRIUMF Research-Support . . .			
	Measurement of the n-p Spin Correlation Parameter A nn (IEP-127)	OPR \$	4,958	NSERC
	Co-investigator with Greeniaus, L G: Charge Symmetry Breaking in n-p . . .			

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Neilson, G C	Co-investigator with Sheppard, D M: Q-Measurement on 40Ca at 1 GeV . . .			
	Co-investigator with Cameron, J M: Determination of the Deuteron Charge . . .			
	Co-investigator with McDonald, W J: Tagged Photon Induced Reaction . . .			
	Co-investigator with Cameron, J M: University of Alberta-TRIUMF Research-Support . . .			
Nyland, E	Startup of Microseismic Monitoring of the Strachan Gas Field	CTR	\$ 13,500	AE
	Co-investigator with Kanasewich, E R: Seismic Tomography in Steam Injection . . .			
	Geodynamics of Plate Margin Interaction: Seismic Aspects	OPR	\$ 14,600	NSERC
Olsen, W C	Co-investigator with Hutcheon, D A: Polarization Transfer to Deuteron . . .			
	Co-investigator with Kitching, P: Proton-Proton Bremsstrahlung . . .			
	Co-investigator with Cameron, J M: University of Alberta-TRIUMF Research-Support . . .			
	Co-investigator with Sheppard, D M: Q-Measurement on 40Ca at 1 GeV . . .			
Paranjape, B V	Interface Properties of Two Crystals and Surface Plasma Excitation	OPR	\$ 9,792	NSERC
Pinnington, E H	Spectroscopic Studies of Atomic Energy Levels	OPR	\$ 48,685	NSERC
Razavy, M	Scattering Theory & Many-Body Problem	OPR	\$ 22,800	NSERC
Rostoker, G	Editorial Support Services - To Cover the Cost of Editorial Support Services and Incidental Expenses Incurred by Dr G Rostoker as Editor of the Canadian Journal of Physics	CTR	\$ 45,000	NRC
	Geomagnetic Activity in the Auroral Zone	OPR	\$ 60,000	NSERC
	Co-investigator with Samson, J C: Tape Transport . . .			
Roy, G	Determination Of The Deuteron Charge Form Factor At Large Q (Squared)	OPR	\$ 17,550	NATO
	Co-investigator with Hutcheon, D A: Polarization Transfer to Deuteron . . .			
	Co-investigator with Cameron, J M: University of Alberta-TRIUMF Research-Support . . .			
	Co-investigator with Cameron, J M: Determination of the Deuteron Charge . . .			
	Measurement of Parity Violation in p-p Scattering, IEP-147	OPR	\$ 2,479	NSERC
Rozmus, W	Plasma Theory: Laser-plasma Interactions	OPR	\$ 9,600	NSERC
	Co-investigator with Offenberger, A A (Engineering, Electrical Engineering): KrF Laser Facility . . .			
	Co-investigator with Offenberger, A A (Engineering, Electrical Engineering): Laser Fusion Related Research . . .			
Samson, J C	Tape Transport	EQP	\$ 16,575	NSERC
	Studies of ULF Magnetic Fields, and Plasma Waves in the Earth's Magnetosphere	OPR	\$ 34,560	NSERC
Sheinin, S S	Transmission Electron Microscopy	OPR	\$ 28,800	NSERC
	Co-investigator with Egerton, R F: Transmission Electron Microscope . . .			
Sheppard, D M	Co-investigator with Cameron, J M: Determination of the Deuteron Charge . . .			
	Co-investigator with Hutcheon, D A: Polarization Transfer to Deuteron . . .			
	Co-investigator with Cameron, J M: University of Alberta-TRIUMF Research-Support . . .			
	Q-Measurement on 40Ca at 1 GeV	OPR	\$ 15,864	NSERC
Sherif, H S	Theoretical Studies in Intermediate Energy Nuclear Reactions	OPR	\$ 13,987	NSERC
Spanos, T J T	Thermo-Mechanics of Heavy Oil Reservoirs	CTR	\$ 50,280	AOSTR
Stephenson, J	Theory of Phase Transitions, Statistical Mechanics and Thermodynamics of Fluids and Magnetic Systems	OPR	\$ 9,830	NSERC
Stinson, G M	Co-investigator with Cameron, J M: Determination of the Deuteron Charge . . .			
	Co-investigator with McDonald, W J: Tagged Photon Induced Reaction . . .			
	Co-investigator with Roy, G: Measurement of Parity Violation . . .			
	Co-investigator with Cameron, J M: University of Alberta-TRIUMF Research-Support . . .			
Takahashi, Y	Quantum Field Theory Method in Particle and Many Body Physics	OPR	\$ 32,352	NSERC
Umezawa, H	Study of Ordered States in Particle Physics and Many-Body-Problems	OPR	\$ 49,920	NSERC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Weichman, F L					
Measurements		CTR	\$ 20,563	COM	
Defect Identification in GaAs		OPR	\$ 18,600	NSERC	
Co-investigator with Egerton, R F: Transmission Electron Microscope . . .					
Woods, S B					
Metals at Low Temperatures		OPR	\$ 43,200	NSERC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Conferences	1	\$ 9,000	NSERC	48	\$ 2,067,051
Contracts	7	\$ 368,993	Other Provincial	3	\$ 248,780
Equipment	2	\$ 340,575	Other Federal	4	\$ 116,650
Infrastructure	1	\$ 27,763	Other Agencies	4	\$ 56,113
Operating	48	\$ 1,742,263	Total	59	\$ 2,488,594
Total	59	\$ 2,488,594			

Department of Psychology *see also Faculty of Arts*

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Bourassa, C M					
Factors Influencing Visible Persistence and Perceptual Schemata		OPR \$	10,000	NSERC	
Caelli, T M					
Cross-Correlation Techniques for Human and Computer Pattern Recognition		OPR \$	40,000	NSERC	
Di Lollo, V					
To Cover Expenses Connected with Editorial Work on the Canadian Journal of Psychology		OPR \$	14,600	CPSYA	
Initial Stages of Visual Information Processing		OPR \$	38,863	NSERC	
Dobbs, A R					
Minor Head Injury and Accident Prevention		OPR \$	62,600	ACOH	
Spatial orientation in Alzheimer's disease		OPR \$	10,650	AMHAC	
Memory Deficits in the Aged		OPR \$	46,101	AMHAC	
Co-investigator with Rule, B G (Arts): Scripts for Aggression . . .					
Grant, D S					
Short-term Retention in Pigeons		OPR \$	20,301	NSERC	
Heth, C D					
Processes of Spatial Search		OPR \$	10,254	NSERC	
Kavaliers, M					
Opioid Systems and Behavioral, Environmental and Physiological Factors		OPR \$	38,015	NSERC	
Kingma, Y J					
Memory Development in Disabled and Mentally Retarded Children		OPR \$	12,000	NSERC	
Robertson, A M					
Neural Substrates of Prefrontal Cortex Self-Stimulation and of Neuroleptic Drugs		OPR \$	14,880	NSERC	
Rozeboom, W W					
Quadratic Factor Analysis		OPR \$	3,840	NSERC	
Rule, S J					
Judgments of Perceptual Magnitudes		OPR \$	24,934	NSERC	
Type of Award	No.	Amount	Source of Funds	No.	Amount
Operating	14	\$ 347,038	NSERC	10	\$ 213,087
			Other Provincial	3	\$ 119,351
			Other Agencies	1	\$ 14,600
			Total	14	\$ 347,038

Department of Statistics and Applied Probability

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Al-Hussaini, A				
Stochastic Processes		OPR \$	8,388	NSERC
Aly, E E A				
On Some Strong and Weak Approximations and Their Applications in Nonparametric Statistics		OPR \$	7,200	NSERC
Elliott, R J				
Filtering and Smoothing of Stochastic Processes		OPR \$	15,000	NSERC
Filtering of Jump Processes		CTR \$	31,335	USAF
Ghurye, S G				
Problems in Applied Mathematical Statistics		OPR \$	6,720	NSERC
Hooper, P M				
Optimal Estimation and Prediction in Multivariate Analysis		OPR \$	7,968	NSERC

<i>Investigator</i>	<i>Project Title</i>			<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Karunamuni, R J	On the Empirical Bayes Procedure			OPR	\$	6,000	NSERC
Prasad, N G N	Small Area Estimation; Jackknife Procedure for Variance Component Models			OPR	\$	6,000	NSERC
Type of Award	<i>No.</i>		<i>Amount</i>	Source of Funds	<i>No.</i>		<i>Amount</i>
Contracts	1	\$	31,335	NSERC	7	\$	57,276
Operating	7	\$	57,276	Other Agencies	1	\$	31,335
Total	8	\$	88,611	Total	8	\$	88,611

Department of Zoology

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Addicott, J F	Regulation of Costs and Benefits in Mutualistic Systems	OPR \$	27,500	NSERC
Boag, D A	Gyrfalcon Foraging Strategies at Kilgavik, N.W.T.	OPR \$	2,000	EC
	Fate of Carbofuran in Prairie Ponds and its Effects on Aquatic Invertebrates	OPR \$	10,600	EC
	Problems in Animal Dispersal	OPR \$	39,500	NSERC
	Co-investigator with Prepas, E E: Meanook Biological Research Station . . .			
	Are Artificial Islands in Shallow Water Bodies an Ecological Trap for Waterfowl	OPR \$	5,000	RPWF
Boutin, S A	Experimental Analysis of Vertebrate Community Dynamics in the Boreal Forest:	OPR \$	50,000	NSERC
	\$275,000.00 - Collaborative Study with Krebs at University of British Columbia			
	Experimental Tests of Hypotheses Concerning Mammalian Population Regulation	OPR \$	3,031	NSERC
Chia, F S	Development and Reproduction of Marine Invertebrates with Special Emphasis on Larval Biology	OPR \$	64,500	NSERC
Clifford, H F	Ecology of Aquatic Invertebrates	OPR \$	24,960	NSERC
Gorbman, A	Sexual Development of Hagfish	OPR \$	8,000	NSERC
Hannon, S J	Aggression and Territoriality in Female Willow Ptarmigan	OPR \$	6,150	NGS
	Effect of Behaviour on Population Regulation and Mating System in Northern Birds	OPR \$	14,400	NSERC
	Northern Supplement - Investigation of a Decline in Numbers of Willow Ptarmigan	OPR \$	4,000	NSERC
Holmes, J C	Investigations on Communities of Parasitic Helminths	OPR \$	29,500	NSERC
Kaufman, W R	Physiological and Developmental Studies on the Salivary Glands and Ovaries of Ixodid Ticks (Acari: Ixodidae)	OPR \$	24,000	NSERC
Lauber, J K	Photobiological Effects on Endocrine and Growth Parameters	OPR \$	28,800	NSERC
MacKay, W C	Applied Aquatic Studies Workshop - 17 and 18 February 1987	CTR \$	1,500	AE
	Co-investigator with Prepas, E E: An Atlas of Alberta Lakes . . .			
	Role of Benthic Invertebrates in Nutrient Cycling in Lakes	OPR \$	23,096	AERT
	Environmental Physiology of Fish	OPR \$	19,000	NSERC
	Co-investigator with Prepas, E E: Meanook Biological Research Station . . .			
	Co-investigator with Freeman, M M (Arts, Anthropology): "Knowing the North: Integrating . . .			
Mahrt, J L	Investigations on Protozoan Parasites of Birds, Reptiles, and Mammals	OPR \$	15,360	NSERC
	Co-investigator with Zwickel, F C: Population Ecology of Vertebrates . . .			
Malhotra, S K	Plasma Membrane: Immunocytochemical and Structural Studies	OPR \$	30,336	NSERC
	Co-investigator with Egerton, R F (Physics): Transmission Electron Microscope . . .			
Murie, J O	Behavioral Ecology, Life History, and Social Behavior of Sciurid Rodents	OPR \$	29,500	NSERC
Nelson, J S	Systematic and Biogeographic Studies of Trachinoid and Cottoid Fishes, Classification of Fishes, and Evolutionary Studies of Primarily Stickleback Fishes	OPR \$	24,000	NSERC
Nursall, J R	Biology and Sexual Behavior in <i>Ophioblennius atlanticus</i>	OPR \$	15,000	NSERC
Palmer, A R	Shell Form and Evolution in Prosobranch Gastropods: Genetic Basis and Adaptive Value of Entraspecific Shell Variation	OPR \$	46,500	NSERC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Peter, R E				
	Induced Spawning (Alberta/China)	CTR \$	53,530	IDRC
	Neuroendocrine and Endocrine Control Mechanisms in Teleost Fishes	OPR \$	72,732	NSERC
Prepas, E E				
	Monitoring Groundwater Contribution to Water and Nutrient Budgets of Aquatic Systems in Alberta	CTR \$	19,975	AE
	Partial Support for Visiting Speakers: Zoology Seminar Series	CTR \$	2,200	AE
	Water Quality Survey	CTR \$	5,500	AE
	Figure Eight Lake Aerations Study	OPR \$	15,000	AE
	An Atlas of Alberta Lakes	CTR \$	10,000	AE
	The Influence of Sediment-released Phosphorus on Lake Greenness in Deep Alberta Lakes	OPR \$	21,800	AERT
	Towards Prairie Lake Restoration: Lake Sediments as a Phosphorus and Nitrogen Source in Deep Prairie Lakes	OPR \$	12,000	EC
	Prediction and Manipulation of Productivity in Eutrophic Lakes	OPR \$	27,500	NSERC
	Meanook Biological Research Station	INF \$	14,788	NSERC
Reimchen, T E				
	Niche Segregation, Sources of Mortality and Adaptation in Stickleback	OPR \$	19,200	NSERC
Samuel, W M				
	Impact of the Winter Tick, <i>Dermacentor albipictus</i> , on Moose	OPR \$	28,800	NSERC
	Big Game Susceptibility to Winter Ticks in Central Alberta	OPR \$	14,000	RPWF
Spencer, A N				
	Cellular Basis of Simple Behaviours in Invertebrates	OPR \$	37,964	NSERC
	Inverted Microscope	EQP \$	17,197	NSERC
Stacey, N E				
	Hormonal, Pheromonal, and Central Neurochemical Aspects of Sexual Behavior in Fish	OPR \$	36,352	NSERC
Steiner, A L				
	Behavioral and Evolutionary Biology of Wasps, Their Insect Prey and Parasites	OPR \$	9,000	NSERC
Stirling, I G				
	Body Composition in Bears with the Development of Techniques to Measure Physical Condition in Polar Bears	CTR \$	1,000	EC
	Feeding Ecology of Ringed Seals in the Southeast Beaufort Sea During Late Summer and Fall	OPR \$	9,000	FOC
	Deposition and Use of Fat in Polar Bears and Black Bears	OPR \$	20,100	NSERC
Strobeck, C				
	Molecular Approaches to the Study of Evolutionary Processes in Natural Populations	OPR \$	33,438	NSERC
	Co-investigator with Dean (Agriculture and Forestry): Genetic Variation and Adaptation . . .			
	Co-investigator with Prepas, E E: Meanook Biological Research Station . . .			
Tonn, W M				
	Community Ecology and Population Regulation of Fishes in Small Boreal Lakes	OPR \$	22,500	NSERC
	Co-investigator with Prepas, E E: Meanook Biological Research Station . . .			
Wang, L C H				
	Investigate Mode and Mechanism of Theophylline - Stimulated Thermogenesis	CTR \$	64,700	DND
	Homeotherms in Cold: Strategies and Adaptations	OPR \$	47,316	NSERC
	Co-investigator with Clandinin, M T (Home Economics, Foods and Nutrition): Demonstration of the in-vivo Significance . . .			
	Co-investigator with Clandinin, M T (Home Economics, Foods and Nutrition): Bellows Assembly for Existing Isotope . . .			
	Co-investigator with Pang, P K (Medicine, Physiology): Herbal Medicine Program . . .			
Wilson, M V				
	Late Cretaceous and Early Tertiary Fishes of North America	OPR \$	22,080	NSERC
Zalik, S E				
	Labconco Freeze Dryer with Vac-Stop Tray Dryer & 12 port Drying Chamber	EQP \$	20,222	AHFMR
	Studies on the Biology of Cellular Adhesions During Embryogenesis	OPR \$	42,278	MRC
	Studies on the Cell Surface During Dedifferentiation, Differentiation and Development	OPR \$	40,000	NSERC
Zwicker, F C				
	Population Ecology of Vertebrates	OPR \$	35,520	NSERC

Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	8	\$ 158,405	AHFMR	1	\$ 20,222
Equipment	2	\$ 37,419	MRC	1	\$ 42,278
Infrastructure	1	\$ 14,788	NSERC	35	\$ 982,374
Operating	44	\$ 1,111,313	Other Provincial	10	\$ 118,071
Total	55	\$ 1,321,925	Other Federal	7	\$ 152,830
			Other Agencies	1	\$ 6,150
			Total	55	\$ 1,321,925

VP Academic

Type of Award	No.	Amount
Infrastructure	2	\$ 93,800
Operating	1	\$ 8,125
Total	3	\$ 101,925

Source of Funds	No.	Amount
AHFMR	1	\$ 83,800
SSHRC	1	\$ 10,000
Other Federal	1	\$ 8,125
Total	3	\$ 101,925

Library System

Investigator	Project Title	Award	Amount	Agency
Charles, J	Home Museum of Artists' Books	INF	\$ 10,000	SSHRC
Freeman, P	Award to U of A Medical Library - Library Support	INF	\$ 83,800	AHFMR

Type of Award	No.	Amount
Infrastructure	2	\$ 93,800

Source of Funds	No.	Amount
AHFMR	1	\$ 83,800
SSHRC	1	\$ 10,000
Total	2	\$ 93,800

University of Alberta Archives

Investigator	Project Title	Award	Amount	Agency
Parker, J M	William Pearce Papers	OPR	\$ 8,125	CCA

Operating	Other Federal	1	\$ 8,125
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VP Research

Type of Award	No.	Amount
Conferences	1	\$ 3,000
Contracts	3	\$ 75,778
Total	4	\$ 78,778

Source of Funds	No.	Amount
SSHRC	1	\$ 3,000
Other Provincial	1	\$ 10,000
Other Federal	2	\$ 65,778
Total	4	\$ 78,778

VP Research

Investigator	Project Title	Award	Amount	Agency
Abu-Laban, B	To Assist in Publishing the Proceedings of the National Conference on Research Funding of the Humanities and Social Sciences	CFC	\$ 3,000	SSHRC
Armit, R E	A Biotechnology Inventory Study at the University of Alberta	CTR	\$ 10,000	ATRT
Kaplan, J G	A Study of Technology Transfer - University of Alberta	CTR	\$ 37,078	NRC
	Technology Transfer	CTR	\$ 28,700	NRC

Type of Award	No.	Amount
Conferences	1	\$ 3,000
Contracts	3	\$ 75,778
Total	4	\$ 78,778

Source of Funds	No.	Amount
SSHRC	1	\$ 3,000
Other Provincial	1	\$ 10,000
Other Federal	2	\$ 65,778
Total	4	\$ 78,778

Interdisciplinary Research Units

Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	1	\$ 3,050	NSERC	4	\$ 41,918
Contracts	1	\$ 30,000	SSHRC	1	\$ 34,055
Operating	6	\$ 115,162	Other Provincial	3	\$ 72,239
Total	8	\$ 148,212	Total	8	\$ 148,212

Boreal Institute for Northern Studies

Investigator	Project Title	Award	Amount	Agency
Gibson, N				
	Co-investigator with Freeman, M M (Arts, Anthropology): "Knowing the North: Integrating . . .			
Mohsen, A S				
	Fort Chipewyan Bicentennial Contract	CTR	\$ 30,000	AC
	Knowing the North: Integrating Tradition, Technology and Science	CFC	\$ 3,050	NSERC
	Co-investigator with Freeman, M M (Arts, Anthropology): "Knowing the North: Integrating . . .			
Moore, A				
	Co-investigator with Freeman, M M (Arts, Anthropology): "Knowing the North: Integrating . . .			

Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	1	\$ 3,050	NSERC	1	\$ 3,050
Contracts	1	\$ 30,000	Other Provincial	1	\$ 30,000
Total	2	\$ 33,050	Total	2	\$ 33,050

Canadian Institute of Ukrainian Studies

Investigator	Project Title	Award	Amount	Agency
Krawchenko, B				
	Research and Writing of Encyclopedia of Ukraine, \$57,659.96. Funding is Administered Through the Encyclopedia Office at the University of Toronto	OPR		CFUS

Center for the Study of Mental Retardation

Investigator	Project Title	Award	Amount	Agency	
Das, J P	Cognitive Strategies and Reading Performance	OPR	\$ 9,168	NSERC	
	Assessment of Attention, Coding and Planning	OPR	\$ 34,055	SSHRC	
Varnhagen, C K	Logical Relations & Comprehension of Expository Prose	OPR	\$ 10,000	NSERC	
Type of Award	No.	Amount	Source of Funds	No.	Amount
Operating	3	\$ 53,223	NSERC	2	\$ 19,168
			SSHRC	1	\$ 34,055
			Total	3	\$ 53,223

Devonian Botanic Garden

Investigator	Project Title	Award	Amount	Agency
Currah, R				
	Mycotrophy, Microhabitat Definition and Propagation of Native Orchids	OPR	\$ 18,727	AERT
	Cultural and Taxonomic Studies of Ectomycorrhizal Fungi Associated with Pinus contorta and Picea mariana in West Central Alberta	OPR	\$ 23,512	AFDRT
	Taxonomy and Ecology of Fungi Associated With 1) Orchids, and 2) Keratinous Substrates	OPR	\$ 19,700	NSERC
Sigler, L				
	Co-investigator with Currah, R: Cultural and Taxonomic Studies . . .			

Type of Award	<i>No.</i>	<i>Amount</i>
Operating	3	\$ 61,939

Source of Funds	<i>No.</i>	<i>Amount</i>
NSERC	1	\$ 19,700
Other Provincial	2	\$ 42,239
Total	3	\$ 61,939

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FOLIO

Special Issue

Sponsored Research
at the
University of Alberta
1987-1988



University of Alberta
Edmonton, Canada

This special edition of *Folio* has been prepared
at the request of the Vice-President (Research).
Information was compiled by the Office of Research Services
in consultation with the departments and units on campus.

March 1989

Sponsored Research at the University of Alberta 1987/88

Introduction

This special edition of Folio provides a mechanism for the University of Alberta to gratefully acknowledge the role of those external organizations who have supported research programs during the 1987/88 fiscal year. The report also presents an overall statement on sponsored research at the University of Alberta, and provides an opportunity for researchers to locate other researchers and sponsoring agencies in their areas of expertise.

The listings identify selected awards totalling \$45,194,706. Total sponsored research revenue¹ in 1987/88 was \$58,929,000.

Sponsored Research

Sponsored research includes grants, contracts, and related types of external funding. Specific awards included in this report represent contracts and research prizes, plus conference, equipment, technology transfer, infrastructure, and operating research grants. Financial support provided as the result of general and development funding to the University (e.g. internal endowment transfers) is outside the scope of this report, as is sponsored research conducted by incorporated centres of research associated with the University (e.g. the Alberta Microelectronic Centre), and other affiliated institutions (e.g. the Cross Cancer Institute). All other categories and awards that were administered through organizations other than the Office of Research Services, University of Alberta (such as private consulting arrangements), are also outside the scope of this report, as is funding distributed via internal University of Alberta committees (e.g. the Central Research Fund).

Listings

This report identifies principal researchers, research projects and research sponsors, and notes the amount of each award. On-campus co-investigators are also identified; however, a dollar value for each award is assigned only once in the report and appears with the listing of the investigator whose name occurs first on the original application.

Format

The report is organized as follows:

- 1) Listings of Faculties, Departments, and units (page 5).
- 2) Explanation of agency codes (pages 6, 7).
- 3) Agency codes listed by category (pages 7, 8).

- 4) Explanation of award codes (page 8).
- 5) Sponsored research listings (pages 9-73).
- 6) Index of researchers (pages 75-78).

Note: The name of the Faculty, Department, or unit that was used in 1987/88 is the name used here.

Dimensions of Research

Sponsored research funding is only one measure of research effort. As a result, this report is not intended, nor should it be interpreted as, representing the entire research effort at the University of Alberta. Indeed, many disciplines are continuing to achieve positive results without external sponsorship, including published articles, books and monographs, exhibitions, patents, consultations and related activities.

Additional Sources of Research Information

Other information sources help present a more comprehensive research picture of campus-wide research activity. The University of Alberta Research Expertise Database lists the research interests and major expertise of over 1200 University staff. It is multi-disciplinary in scope, and provides an effective way to identify and locate University staff having specific knowledge or expertise in a given area. The Research Expertise Database is available to anyone with access to the campus' MTS computing system.

Faculties, Institutes or research groups produce publications of their own, often presenting more technical description of their research efforts. Examples of such publications are the Faculty of Arts *Report on Research and Creative Work*, and the Faculty of Medicine *From Laboratory to Marketplace* (Biotechnology Initiatives). Among others, the Faculties of Science, Engineering, and Agriculture and Forestry also produce inventories.

Individual Departments may produce graduate calendars which are other sources of information concerning research activities. The Faculty of Graduate Studies and Research produces *A Profile* which also provides a general overview of the type of research conducted at the University of Alberta.

¹ Schedule 4, University of Alberta Financial Statements

Office of Research Services

The Office of Research Services (ORS) was established in 1982 as a reorganization of the former Research Grants and Contracts Office, and is under the direction of the Vice-President (Research). The scope of ORS functions can be divided into two areas: sponsored research and technology transfer.

In sponsored research, ORS provides the infrastructure for processing research grants (both internal through the Central Research Fund and the AHFMR Internal Allocations Committee, and external through off-campus sponsoring agencies) and contracts at the University of Alberta. In technology transfer, ORS provides support through Technology Development Officers, who assist in the transfer of University developed technologies to outside parties. ORS also maintains and updates the University of Alberta Research Expertise Database.

University of Alberta

The University of Alberta, Canada's second largest university², is committed to the pursuit of excellence in education and research. Programs are diversified and broadly based across 18 Faculties and 88 departments. With over 1,700 faculty members having backgrounds from various parts of the world and 24,000 students from over 100 countries, the University of Alberta is appropriately referred to as an international centre in terms of its people and its outlook.

For more information on University of Alberta sponsored research, please contact:

Office of Research Services
University of Alberta
1-3 University Hall
Edmonton, Alberta, Canada
T6G 2J9

Phone: (403) 492-5360

Selected Sponsored Research

This summary of the total amount of research awarded to individuals and directly to the University highlights the level of support provided by major agencies. The largest support to research comes from provincial and federal agencies. There is, however, a wide diversity of funding sources. A listing of all sources and their respective award codes is provided on pages 6, 7, and 8.

Research Grants and Contracts from Selected Sources to Individuals and Block Grants Administered by Faculties

<i>Agency</i>	<i>Amount</i>
AHFMR ³	\$ 5,583,945
MRC	\$ 7,009,559
NSERC	\$ 15,624,664
SSHRC	\$ 696,420
Other Provincial	\$ 6,328,816
Other Federal	\$ 3,200,278
Other Agencies	\$ 6,751,024
Total	\$ 45,194,706

External Funding Awarded to the University for Distribution through the Central Research Fund⁴

<i>Agency</i>	<i>Amount</i>
AHFMR	\$ 372,800
NSERC	\$ 376,000
SSHRC	\$ 114,455
Total	\$ 863,255

²in terms of enrollment

³The AHFMR support is partial in this report and excludes scholarship, stipend and studentship awards. AHFMR level of support including these categories was \$12,487,000.

⁴Annual Reports for the Central Research Fund are available from either Department Chairs' offices or the Office of Research Services.

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Agencies

AACES	Alberta Advisory Committee For Educational Studies	CHF	Canadian Heart Foundation
AAEM	Alberta Advanced Education	CIBAC	Ciba-Corning Limited
AIL	Alberta Agriculture Industries Limited	CIDA	Canadian International Development Agency
AARN	Alberta Association Of Registered Nurses	CMC	Communications Canada
AART	Alberta Agricultural Research Trust	COM	Cominco
ABA	Alberta Beekeepers Association	CPRF	Canadian Psychiatric Research Foundation
ACB	Alberta Cancer Board	CPSYA	Canadian Psychological Association
ACOC	Alberta College Of Chiropractors	CRIAW	Canadian Research Institute For The Advancement Of Women
ACOH	Alberta Community And Occupational Health	CYAN	Cyanamid
ACPMB	Alberta Chicken Producers' Marketing Board	DBC	Dairy Bureau Of Canada
ADA	Alberta Department Of Agriculture	DCF	Donner Canadian Foundation
AE	Alberta Environment	DCL	Domecrete Canada Limited
AECC	Alberta Educational Communications Corporation	DEBIO	Debiopharm S A
AECL	Atomic Energy Of Canada	DINA	Department Of Indian And Northern Affairs
AED	Alberta Education	DND	Department Of National Defence
AEFMB	Alberta Egg And Fowl Marketing Board	DOCK	Gordon Docken Memorial Endowment
AENCL	Alberta Energy Company Limited	DOW	Dow Chemical Canada Incorporated
AENR	Alberta Energy	DRIE	Department Of Regional Industrial Expansion
AERT	Alberta Environmental Research Trust	DUCKS	Ducks Unlimited Canada
AFDRT	Alberta Forest Development Research Trust	DUP	Du Pont Canada Incorporated
AFLCA	Alberta Fitness Leadership Certification Association	EBH	Edmonton Board Of Health
AFLW	Alberta Forestry, Lands And Wildlife	EC	Environment Canada
AFNR	Alberta Foundation For Nursing Research	ECCO	Ecco Consultants Limited
AGCA	Agriculture Canada	ECECA	Edmonton Civic Employees' Charitable Assistance Fund
AGR	AGR Research Technology Limited	EIC	Employment And Immigration Commission
AHFMR	Alberta Heritage Foundation For Medical Research	EMRC	Energy, Mines And Resources Canada
AICE	American Institute Of Chemical Engineers	EPD	Edmonton Police Department
AID	Aid Services Of Edmonton	ETHUR	Ethura/A Research And Consulting Company
ALA	Alberta Lung Association	FAS	Fitness And Amateur Sport
ALF	Alberta Law Foundation	FINN	Finnish Sugar Limited
AMHAC	Alberta Mental Health Advisory Council	FISON	Fisons Corporation Limited
AMUSA	Alberta Museums Association	FOC	Fisheries And Oceans Canada
AOSTR	Alberta Oil Sands Technology And Research Authority	GLAS	Gay And Lesbian Awareness Society
APPM	Alberta Pork Producers Marketing Board	GNWT	Government Of The Northwest Territories
ARC	Alberta Research Council	GSC	Geological Survey Of Canada
ARCA	Agriculture Research Council Of Alberta	HLL	Hoffman-Laroche Limited
ARP	Alberta Recreation And Parks	HWC	Health And Welfare Canada
ARUM	Arum Geological Consultants Incorporated	IDRC	International Development Research Center
AS	Arthritis Society	IHCE	International Hockey Centre Of Excellence
ASC	Alberta Sport Council	ILSI	International Life Sciences Institute - Risk Science Institute
ASCHR	Alberta Special Crops And Horticultural Research Centre	IOL	Imperial Oil Limited
ASSCH	Alberta Social Services And Community Health	IRPP	Institute For Research On Public Policy
AT	Alberta Transportation	JDF	Juvenile Diabetes Foundation
ATOUR	Alberta Tourism	JHSA	John Howard Society Of Alberta
ATRT	Alberta Technology, Research And Telecommunications	KFC	Kidney Foundation Of Canada
BDRC	Black Dragon River Consortium	KIB	W K Kellogg Foundation
BIOM	Biomira Incorporated	KSC	Kellogg Salada Canada Incorporated
BIOSI	Biosis	LTi	Liposome Technology Incorporated
BNR	Bell-Northern Research Limited	MAXIS	Maxis Energy Canada Limited
BOE	Boeing Computer Services	MDA	Muscular Dystrophy Association Of Canada
BONIS	Bonis And Company Limited	MDBDF	March Of Dimes Birth Defects Foundation
BVI	Bow Valley Industries Limited	MERIE	Institut Merieux
CALBI	California Biotechnology Limited	MFC	Merck Frosst Canada Incorporated
CANG	Cangene Corporation	MILES	Miles Pharmaceuticals
CC	Canada Council	MISC	Miscellaneous Private Donations
CCA	Canadian Council Of Archives	MRC	Medical Research Council
CCC	Canola Council Of Canada	MSI	MSI Foundation
CCFF	Canadian Cystic Fibrosis Foundation	MSS	Multiple Sclerosis Society Of Canada
CDA	Canadian Diabetes Association	MUSC	Medical University Of South Carolina
CE	City Of Edmonton	NATO	North Atlantic Treaty Organization
CEMA	Canadian Egg Marketing Agency	NCI	National Cancer Institute Of Canada
CFAGS	Canadian Fund For Advancement Of General Surgery	NCOR	Novacor Chemicals Limited
CFIC	Canadian Foundation For Ileitis And Colitis	NORAC	Norac Technologies Incorporated
CFLRI	Canadian Fitness And Lifestyle Research Institute	NORD	Nordic Laboratories Incorporated
CFS	Canadian Forestry Service	NORSK	Norsk Hydro
CFUS	Canadian Foundation For Ukrainian Studies	NOVA	Nova Corporation
CHEL	Canadian Hunter Exploration Limited	NRC	National Research Council Of Canada
CHEM	Chembiomed Limited	NSDME	Nova Scotia Department Of Mines And Energy
		NSERC	Natural Sciences And Engineering Research Council

ORTHO	Ortho Pharmaceuticals
PAE	Petroleum Aid To Education Trust Fund
PALM	Palm Dairies-Cringle Foundation
PENN	Pennwalt Corporation
PPI	Potash And Phosphate Institute
PRON	Pro-Neuron Incorporated
RPWF	Recreation, Parks And Wildlife Foundation
RSI	Risk Science Institute
SANDO	Sandoz Agro Canada Incorporated
SCICA	Sci-Can Diagnostics Limited
SCL	Syncrude Canada Limited
SEARL	Searle, G D And Company Of Canada Limited
SERAG	Seragen Incorporated
SEWF	Samuel And Emma Winters Foundation
SGC	Solicitor General Canada
SHELL	Shell Canada Limited
SHT	Saskatchewan Highway And Transportation
SPC	Sport Canada
SRC	Swiss Red Cross
SSC	Secretary Of State Canada
SSEF	Steel Structures Education Foundation
SSHRC	Social Sciences And Humanities Research Council
STAT	Statkraft
TAIHO	Taiho Pharmaceuticals Limited
TAUC	Transalta Utilities Corporation
TN	Thomas/Newbound
UC	University Of Calgary
UCEA	University Council For Educational Administration
ULTRA	Ultramar Oil And Gas Canada Limited
UOL	University Of London (England)
UPJ	Upjohn Company Of Canada
USAF	U S Air Force
USDA	U S Department Of The Army
USFS	United States Forest Service
USNIH	U S Public Health Services
UVA	University Of Virginia
UWIN	University Of Winnipeg
WCOF	Western Co-Operative Fertilizers Limited
WGRF	Western Grains Research Foundation
WMJ	WMJ Metals Limited
WWFC	World Wildlife Fund Canada
ZEISS	Zeiss, Carl Canada Limited

Agencies by Category

Alberta Government Agency

ACB	Alberta Cancer Board
AMHAC	Alberta Mental Health Advisory Council
ARCA	Agriculture Research Council Of Alberta

Alberta Government Crown Corporation

AECC	Alberta Educational Communications Corporation
AOSTR	Alberta Oil Sands Technology And Research Authority
ARC	Alberta Research Council
ASC	Alberta Sport Council

Alberta Government Department

AAEM	Alberta Advanced Education
ACOH	Alberta Community And Occupational Health
ADA	Alberta Department Of Agriculture
AE	Alberta Environment
AED	Alberta Education
AENR	Alberta Energy
AFLW	Alberta Forestry, Lands And Wildlife
ARP	Alberta Recreation And Parks
ASSCH	Alberta Social Services And Community Health
AT	Alberta Transportation
ATOUR	Alberta Tourism
ATRT	Alberta Technology, Research And Telecommunications

Alberta Government Foundation/Trust

AART	Alberta Agricultural Research Trust
AERT	Alberta Environmental Research Trust
AFDRT	Alberta Forest Development Research Trust
AFNR	Alberta Foundation For Nursing Research
AHFMR	Alberta Heritage Foundation For Medical Research
RPWF	Recreation, Parks And Wildlife Foundation

Canadian Government Agency

CC	Canada Council
CCA	Canadian Council Of Archives
CIDA	Canadian International Development Agency
MRC	Medical Research Council
NRC	National Research Council Of Canada
NSERC	Natural Sciences And Engineering Research Council
SSHRC	Social Sciences And Humanities Research Council

Canadian Government Crown Corporation

AECL	Atomic Energy Of Canada
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Canadian Government Department

AGCA	Agriculture Canada
CFS	Canadian Forestry Service
CMC	Communications Canada
DINA	Department Of Indian And Northern Affairs
DND	Department Of National Defence
DRIE	Department Of Regional Industrial Expansion
EC	Environment Canada
EIC	Employment And Immigration Commission
EMRC	Energy, Mines And Resources Canada
FAS	Fitness And Amateur Sport
FOC	Fisheries And Oceans Canada
GSC	Geological Survey Of Canada
HWC	Health And Welfare Canada
SGC	Solicitor General Canada
SPC	Sport Canada
SSC	Secretary Of State Canada

Canadian Government Foundation/Trust

BDRC	Black Dragon River Consortium
CFLRI	Canadian Fitness And Lifestyle Research Institute
IDRC	International Development Research Center

Canadian Private Association/Society

AACES	Alberta Advisory Committee For Educational Studies
AARN	Alberta Association Of Registered Nurses
ABA	Alberta Beekeepers Association
ACOC	Alberta College Of Chiropractors
ACPMB	Alberta Chicken Producers' Marketing Board
AEFMB	Alberta Egg And Fowl Marketing Board
AFLCA	Alberta Fitness Leadership Certification Association
AID	Aid Services Of Edmonton
ALA	Alberta Lung Association
AMUSA	Alberta Museums Association
APPM	Alberta Pork Producers Marketing Board
AS	Arthritis Society
CCC	Canola Council Of Canada
CCFF	Canadian Cystic Fibrosis Foundation
CDA	Canadian Diabetes Association
CEMA	Canadian Egg Marketing Agency
CPSYA	Canadian Psychological Association
CRIAW	Canadian Research Institute For The Advancement Of Women
DBC	Dairy Bureau Of Canada
DUCKS	Ducks Unlimited Canada
GLAS	Gay And Lesbian Awareness Society
IRPP	Institute For Research On Public Policy
JHSA	John Howard Society Of Alberta
MDA	Muscular Dystrophy Association Of Canada
MSS	Multiple Sclerosis Society Of Canada
NCI	National Cancer Institute Of Canada

PPI Potash And Phosphate Institute

Canadian Private Donor

DOCK Gordon Docken Memorial Endowment
MISC Miscellaneous Private Donations
TN Thomas/Newbound

Canadian Private Foundation/Trust

ALF Alberta Law Foundation
CFAGS Canadian Fund For Advancement Of General Surgery
CFIC Canadian Foundation For Ileitis And Colitis
CFUS Canadian Foundation For Ukrainian Studies
CHF Canadian Heart Foundation
CPRF Canadian Psychiatric Research Foundation
DCF Donner Canadian Foundation
ECECA Edmonton Civic Employees' Charitable Assistance Fund
KFC Kidney Foundation Of Canada
MSI MSI Foundation
PALM Palm Dairies-Cringle Foundation
SEWF Samuel And Emma Winters Foundation
SSEF Steel Structures Education Foundation
WGRF Western Grains Research Foundation
WWFC World Wildlife Fund Canada

Canadian Private Industry/Business

AAIL Alberta Agriculture Industries Limited
AENCL Alberta Energy Company Limited
AGR AGR Research Technology Limited
ARUM Arum Geological Consultants Incorporated
ASCHR Alberta Special Crops And Horticultural Research Centre
BIOM Biomira Incorporated
BNR Bell-Northern Research Limited
BOE Boeing Computer Services
BONIS Bonis And Company Limited
BVI Bow Valley Industries Limited
CANG Cangene Corporation
CHEL Canadian Hunter Exploration Limited
CHEM Chembiomed Limited
CIBAC Ciba-Corning Limited
COM Cominco
CYAN Cyanamid
DCL Domecrete Canada Limited
DEBIO Debiopharm S A
DOW Dow Chemical Canada Incorporated
DUP Du Pont Canada Incorporated
ECCO Ecco Consultants Limited
ETHUR Ethura/A Research And Consulting Company
FISON Fisons Corporation Limited
HLL Hoffman-Laroche Limited
IOL Imperial Oil Limited
KSC Kellogg Salada Canada Incorporated
LTI Liposome Technology Incorporated
MAXIS Maxis Energy Canada Limited
MFC Merck Frosst Canada Incorporated
MILES Miles Pharmaceuticals
NCOR Novacor Chemicals Limited
NORAC Norac Technologies Incorporated
NORD Nordic Laboratories Incorporated
NOVA Nova Corporation
ORTHO Ortho Pharmaceuticals
PAE Petroleum Aid To Education Trust Fund
PRON Pro-Neuron Incorporated
SANDO Sandoz Agro Canada Incorporated
SCICA Sci-Can Diagnostics Limited
SCL Syncrude Canada Limited
SEARL Searle, G D And Company Of Canada Limited
SHELL Shell Canada Limited
TAIHO Taiho Pharmaceuticals Limited
TAUC Transalta Utilities Corporation
ULTRA Ultramar Oil And Gas Canada Limited
UPJ Upjohn Company Of Canada

WCOF Western Co-Operative Fertilizers Limited
WMJ WMJ Metals Limited
ZEISS Zeiss, Carl Canada Limited

Foreign Govt. Agency/Foundation/Dept.

SRC Swiss Red Cross
UOL University of London (England)

Foreign Private Agency/Foundation/Donor

MERIE Institut Merieux

Foreign Private Industry/Business

FINN Finnish Sugar Limited
NORSK Norsk Hydro
STAT Statkraft

Multi-National Agency

IHCE International Hockey Centre Of Excellence
NATO North Atlantic Treaty Organization

Other Canadian University

UC University Of Calgary
UWIN University Of Winnipeg

Other Government - Municipal

CE City Of Edmonton
EBH Edmonton Board Of Health
EPD Edmonton Police Department
SHT Saskatchewan Highway And Transportation

Other Govt. Agency/Foundation/Dept.

GNWT Government Of The Northwest Territories
NSDME Nova Scotia Department Of Mines And Energy

US Govt. Agency/Foundation/Dept.

USAF U S Air Force
USDA U S Department Of The Army
USFS United States Forest Service
USNIH U S Public Health Services
UVA University of Virginia

US Private Agency/Foundation/Donor

AICE American Institute Of Chemical Engineers
ILSI International Life Sciences Institute - Risk Science Institute
JDF Juvenile Diabetes Foundation
MDBDF March Of Dimes Birth Defects Foundation
MUSC Medical University Of South Carolina
RSI Risk Science Institute
UCEA University Council For Educational Administration

US Private Industry/Business

BIOSI Biosis
CALBI California Biotechnology Limited
KIB W K Kellogg Foundation
PENN Pennwalt Corporation
SERAG Seragen Incorporated

Award Codes

CFC Conference Grant
CTR Contract Research
EQP Equipment Grant
INF Infrastructure Grant
OPR Operating Grant
PRZ Research Prize
TTR Technology Transfer Grant

Faculty of Agriculture and Forestry

Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	1	\$ 2,645	AHFMR	1	\$ 47,638
Contracts	31	\$ 916,048	NSERC	54	\$ 1,693,484
Equipment	6	\$ 132,268	Other Provincial	72	\$ 1,705,458
Operating	142	\$ 3,502,430	Other Federal	15	\$ 420,826
Total	180	\$ 4,553,391	Other Agencies	38	\$ 685,985
			Total	180	\$ 4,553,391

Faculty of Agriculture and Forestry

Investigator	Project Title	Award	Amount	Agency
Dean				
	Genetic variation and adaptation among populations of lodgepole pine in Alberta	OPR	\$ 150,000	NSERC
	Transitional forestry support-guaranteed base funds	OPR	\$ 75,000	NSERC
	Forest sciences-forest ecophysiology	OPR	\$ 219,471	NSERC
Operating		NSERC	3	\$ 444,471

Department of Agricultural Engineering

Investigator	Project Title	Award	Amount	Agency
Bach, L				
	Wood rheology: Time-dependent deformations in solid wood products under various modes of mechanical loading	OPR	\$ 11,520	NSERC
Domier, K W				
	Co-investigator with Robertson, J A (Soil Science): Residual effects of previously . . .			
	Metering and placement of urea super granules	OPR	\$ 11,000	AART
	Metering and placement of urea super granules	OPR	\$ 10,000	NORSK
	Energy requirements for pneumatic transport of granular fertilizer	OPR	\$ 7,220	NSERC
	Co-investigator with Lindwall, C W: High pressure fertilizer injection . . .			
Feddes, J J				
	Co-investigator with Young, B A (Animal Science): Thermodynamics in overwintering . . .			
	Design parameters for recirculation duct systems for livestock building ventilation	OPR	\$ 21,000	ADA
	A study of air quality in commercial turkey rearing facilities	OPR	\$ 32,000	ARCA
	Ammonia infrared analyzer	EQP	\$ 11,245	NSERC
	Dust removal from animal housing by ventilation	OPR	\$ 15,891	NSERC
Leonard, J J				
	Co-investigator with Feddes, J J: Design parameters for recirculation . . .			
	Measurement of humidity of agricultural environments	OPR	\$ 15,416	NSERC
Lindwall, C W				
	High pressure fertilizer injection system	OPR	\$ 14,479	NSERC
McQuitty, J B				
	Use of indirect calorimetry to measure animal heat production in commercial confinement facilities	OPR	\$ 11,600	NSERC
Micko, M M				
	Mixed species - wood fibre furnish quality	CTR	\$ 19,640	ARC

Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	1	\$ 19,640	NSERC	7	\$ 87,371
Equipment	1	\$ 11,245	Other Provincial	4	\$ 83,640
Operating	10	\$ 150,126	Other Agencies	1	\$ 10,000
Total	12	\$ 181,011	Total	12	\$ 181,011

Department of Animal Science

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Aherne, F X				
	Influence of feed level and body condition between weaning and mating on sow reproductive performance	OPR \$	8,000	AART
	Nutritive value of spring triticale in hog diets	CTR \$	5,000	ADA
	Research trial to test the validity of 1987 NRC nutrient requirements for gestation and lactation of sows for Alberta feeds and conditions	CTR \$	10,000	ADA
	Research trial to evaluate culled great northern beans as a protein supplement for pig starter rations	CTR \$	5,000	ADA
	An evaluation of the nutritive value of a new hulless barley variety for swine	CTR \$	5,000	ADA
	The effects of prepubertal nutrition on the onset of puberty and ovulation rate in gilts	OPR \$	36,575	ARCA
	The etiology of degenerative joint abnormalities and leg weakness in swine	OPR \$	35,682	NSERC
Baracos, V E				
	Protein metabolism during fever and infection in domestic livestock	OPR \$	40,269	ARCA
	Regulation of protein metabolism in the tumor-bearing host	OPR \$	16,798	NCI
	Control of growth and atrophy of skeletal muscle	OPR \$	16,000	NSERC
	Co-investigator with Christopherson, R J: Evaporator-concentrator-dryer . . .			
	Effects of trauma and athletic therapy on growth and atrophy of skeletal muscle	OPR \$	11,630	SPC
Berg, R T				
	Efficiency models in cow calf systems	OPR \$	12,000	ARCA
Christopherson, R J				
	Influence of temperature on protein and amino acid digestion in ruminants	OPR \$	30,000	ARCA
	Animal physiology research	OPR \$	16,626	HLL
	Control of digestion and metabolism in animals	OPR \$	39,800	NSERC
	Evaporator-concentrator-dryer	EQP \$	13,505	NSERC
de Boer, G				
	Co-investigator with Kennelly, J J: Sustained-release BST studies in . . .			
Hudson, R J				
	Ecological bioenergetics of wild ruminants	OPR \$	24,000	NSERC
Kennelly, J J				
	Growth hormone for dairy cattle - mode of action and effect on milk production and reproductive performance	OPR \$	75,000	ARCA
	Factors influencing the efficiency of protein (amino acids) and energy utilization by dairy cows	OPR \$	62,000	ARCA
	Effect of jet-sploding and extrusion on the nutritive value of canola meal and whole canola seed for dairy cattle	OPR \$	30,000	CCC
	Recombinant bovine somatotropin study at Oyster River, British Columbia	CTR \$	56,442	CYAN
	Sustained-release BST studies in Canada	CTR \$	73,652	CYAN
	Co-investigator with Christopherson, R J: Evaporator-concentrator-dryer . . .			
Leonard, J J				
	Co-investigator with Young, B A: Thermodynamics in overwintering . . .			
Makarechian, M				
	Co-investigator with Price, M A: Studies on the molecular genetics . . .			
Mathison, G W				
	Influence of grain processing and method of feeding on the nutritive value of barley	CTR \$	21,000	ADA
	Yield, preservation and nutritive value of moist hay	OPR \$	44,000	ARCA
	Improving the nutritive value of straw	OPR \$	25,000	ARCA
	Energy efficiencies of ruminants	OPR \$	28,000	ARCA
Price, M A				
	Animal Science Endowment Research	OPR \$	16,024	AAIL
	Studies on the molecular genetics and endocrinological basis of muscle growth in double muscled cattle	OPR \$	20,000	ARCA
Robinson, F E				
	Poultry Research Centre	OPR \$	8,000	ACPMB
	Poultry Research Centre	OPR \$	10,000	AEFMB
	Co-investigator with Christopherson, R J: Evaporator-concentrator-dryer . . .			
Salmon, R K				
	Co-investigator with Price, M A: Studies on the molecular genetics . . .			
	Endocrinological and genetic analysis of superior growth in cattle	OPR \$	25,000	ARCA
	Co-investigator with Hodgetts, R B (Science, Genetics): Molecular genetic engineering of . . .			

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Sauer, W C					
	Determination of the nutritive value of beans, peas and lentils for pigs	CTR \$	13,918	ADA	
	Determination of amino acid digestibilities with the 15 N-isotope dilution technique in feedstuffs for pigs	OPR \$	40,750	ARCA	
	The effect of anti-nutritional factors on pancreatic enzyme secretion and amino acid nutrition in pigs	OPR \$	29,043	NSERC	
Sim, J S					
	Biotechnology research	OPR \$	1,000	AGR	
	Egg yolk product development	CTR \$	68,626	CEMA	
	Canadian barley utilization for poultry feed	OPR \$	27,600	FINN	
	Metabolic fate of ovo-cholesterol and egg yolk factors	OPR \$	15,000	NSERC	
	Lecithin separation from egg yolk by aqueous extraction method	OPR \$	50,000	NSERC	
Thompson, J R					
	Protein turnover in skeletal muscle	OPR \$	16,000	NSERC	
	Co-investigator with Christopherson, R J: Evaporator-concentrator-dryer . . .				
Young, B A					
	Thermodynamics in overwintering bee colonies. An interdisciplinary research program involving university departments and the Alberta Beekeepers Assoc	OPR \$	9,000	AART	
	Thermodynamics in overwintering bee colonies. An interdisciplinary research program involving university departments and the Alberta Beekeepers Assoc	OPR \$	9,000	ABA	
	Within and between breed variation in cold hardiness of cattle	OPR \$	35,000	ARCA	
	Ruminant nutrition - IAEA Fellow, Mr. Zainal Abidin, Indonesia	OPR \$	6,000	CIDA	
	Environmentally induced adaptive changes in whole-animal metabolism	OPR \$	15,000	NSERC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Contracts	9	\$ 258,638	NSERC	10	\$ 254,030
Equipment	1	\$ 13,505	Other Provincial	21	\$ 550,512
Operating	35	\$ 883,797	Other Federal	2	\$ 17,630
Total	45	\$ 1,155,940	Other Agencies	12	\$ 333,768
			Total	45	\$ 1,155,940

Department of Entomology

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Ball, G E	Studies in insect taxonomy	OPR \$	48,000	NSERC	
Craig, D A	Biology of aquatic insects	OPR \$	20,000	NSERC	
Evans, W G	Co-investigator with Young, B A (Animal Science): Thermodynamics in overwintering . . .				
	Co-investigator with Jordan, R B (Science, Chemistry): Mass spectrometry service laboratory . . .				
	Chemical ecology of predatory soil insect guilds	OPR \$	10,000	NSERC	
Feddes, J J	Co-investigator with Young, B A (Animal Science): Thermodynamics in overwintering . . .				
Gooding, R H	Tryptophan metabolism, reproduction and hybrid sterility in the tsetse fly (<i>Glossina morsitans</i>)	OPR \$	38,000	NSERC	
Heming, B S	Studies in insect structure, function, and ontogeny	OPR \$	7,123	NSERC	
Mitchell, B K	Studies on insect chemoreception	OPR \$	20,836	NSERC	
Spence, J R	Host effects on genetics and behaviour of the mountain pine beetle	OPR \$	9,521	AFDRT	
	Studies in insect population biology	OPR \$	27,500	NSERC	
	Co-investigator with Dean (Agriculture and Forestry): Genetic variation and adaptation . . .				
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Operating	8	\$ 180,980	NSERC	7	\$ 171,459
			Other Provincial	1	\$ 9,521
			Total	8	\$ 180,980

Department of Food Science

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Jelen, P					
	Ultrafiltration of cottage cheese whey for new dairy products' use	OPR \$	8,252	AART	
	Properties, reactions and nutritional aspects of cheese whey and its components	OPR \$	29,124	NSERC	
	Ultrafiltration of cottage cheese whey for new dairy products' use	OPR \$	8,500	PALM	
Le Maguer, M					
	Optimization of a contactor for osmotic treatment of fruit and vegetable materials	OPR \$	10,000	BDRC	
	Migration of solutes during water removal in foodstuffs	OPR \$	21,000	NSERC	
Ooraikul, B					
	Co-investigator with Palcic, M M: Enzyme inhibitors - ultracentifuge . . .				
	Immobilization technology for accelerated canola sauce fermentation	OPR \$	42,000	ARCA	
Ozimek, L					
	Co-investigator with Stiles, M E: Feasibility of lactic acid starter . . .				
	Co-investigator with Stiles, M E: Ultra-low temperature storage . . .				
Palcic, M M					
	Enzyme inhibitors - ultracentifuge	EQP \$	47,638	AHFMR	
	Co-investigator with Ooraikul, B: Immobilization technology for accelerated . . .				
	Co-investigator with Hindsgaul, O (Science, Chemistry): Development of ELISA assays for . . .				
	Isotopic and stereochemical probes of monoamine oxidase	OPR \$	21,696	NSERC	
	Co-investigator with Stiles, M E: Ultra-low temperature storage . . .				
Sporns, P					
	Co-investigator with Palcic, M M: Enzyme inhibitors - ultracentifuge . . .				
	Study of glycosyltransferase activity of commercial beta-galactosidases	OPR \$	14,600	NSERC	
	Co-investigator with Stiles, M E: Ultra-low temperature storage . . .				
Stiles, M E					
	Microbiological safety of sandwiches stored in modified atmospheres	OPR \$	10,000	ADA	
	Co-investigator with Palcic, M M: Enzyme inhibitors - ultracentifuge . . .				
	Use of biotechnology to develop innovative systems for preservation of meats	OPR \$	41,000	ARCA	
	Feasibility of lactic acid starter culture production in Alberta	OPR \$	33,000	ARCA	
	Survival of enterobacteriaceae and other bacteria in meat systems	OPR \$	13,177	NSERC	
	Ultra-low temperature storage freezer	EQP \$	8,942	NSERC	
Wolfe, F H					
	Multi-component testing	OPR \$	20,000	ADA	
	Co-investigator with Palcic, M M: Enzyme inhibitors - ultracentifuge . . .				
	Evaluation of the effects of non-meat ingredients on functional properties of meat emulsions	OPR \$	36,000	ARCA	
	Evaluation of the differential formula multicomponent pricing scheme for Alberta milk	OPR \$	34,000	ARCA	
Type of Award	No.	Amount	Source of Funds	No.	Amount
Equipment	2	\$ 56,580	AHFMR	1	\$ 47,638
Operating	15	\$ 342,349	NSERC	6	\$ 108,539
Total	17	\$ 398,929	Other Provincial	8	\$ 224,252
			Other Federal	1	\$ 10,000
			Other Agencies	1	\$ 8,500
			Total	17	\$ 398,929

Department of Forest Science

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Beck, J A				
	Remeasure 30 permanent sample plots and perform necessary maintenance on 100 other permanent sample plots located throughout Alberta	CTR \$	40,000	AENR
	Establishment of 1500 fixed area plots and detailed stem analysis of 500 trees	CTR \$	20,000	AENR
	Maintenance work on 50 sample plots	CTR \$	15,000	AENR
	Stem analyses	CTR \$	20,000	AENR
	Analysis of phase 3 cover type	CTR \$	7,000	AFLW
	Operational inventory evaluation	CTR \$	16,000	AFLW
Butler, J R				
	Habitat selection and ploygyny in the House Wren	OPR \$	1,750	EC
	Amphibians and reptiles of Alberta	OPR \$	8,000	RPWF
Cheliak, W M				
	Evaluation of heterozygosity and performance in pedigreed tree populations	OPR \$	20,000	NSERC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Dancik, B P				
	Editorial support services - To cover the cost of editorial support services and incidental expenses incurred by Dr B Dancik as Editor of the Canadian Journal of Forest Research	CTR \$	40,000	NRC
	Mating system and selection components of conifers	OPR \$	19,500	NSERC
	Co-investigator with Dean (Agriculture and Forestry): Forest sciences-forest ecophysiology . . .			
	Very early evaluation of conifer family growth at harvest age	OPR \$	60,000	NSERC
	Co-investigator with Dean (Agriculture and Forestry): Genetic variation and adaptation . . .			
Hellum, A K				
	Co-investigator with Dean (Agriculture and Forestry): Forest sciences-forest ecophysiology . . .			
Higginbotham, K O				
	Nutrient-moisture interactions in lodgepole pine seedlings	OPR \$	11,707	AFDRT
	Co-investigator with Dean (Agriculture and Forestry): Forest sciences-forest ecophysiology . . .			
Hiratsuka, Y				
	Co-investigator with Ayer, W A (Science, Chemistry): Phytochemical investigation of . . .			
Holroyd, G L				
	Co-investigator with Butler, J R: Habitat selection and plogyny . . .			
	Experimental reintroduction of the Trumpeter Swan to Elk Island	OPR \$	10,000	WWFC
Lieffers, V J				
	Growth of black spruce and tamarack following drainage: tree age and depth of water table	OPR \$	18,972	AFDRT
	Effects of change in water table height on Peatland Black Spruce and Tamarack	OPR \$	15,000	NSERC
Murphy, P J				
	Alberta woodlot survey	CTR \$	5,000	CFS
	Fireline productivity in selected fuel types for hand crews and motorized equipment in the prairie provinces and northwest territories	CTR \$	26,600	CFS
	Co-investigator with MacKinnon, S (Arts, History): History of forest protection in . . .			
Rothwell, R L				
	Canadian Jobs Strategy - Job Development Program	CTR \$	255,897	EIC
	Co-investigator with Dean (Agriculture and Forestry): Forest sciences-forest ecophysiology . . .			
Wein, R W				
	Post-fire nutrient budgets and plant succession	OPR \$	9,428	NSERC
	Co-investigator with Dean (Agriculture and Forestry): Forest sciences-forest ecophysiology . . .			
Woodard, P M				
	Co-investigator with Murphy, P J: Fireline productivity in selected . . .			
	Response of bighorn sheep and vegetation to prescribed burning on Ram Mountain, Alberta	CTR \$	3,500	RPWF
Yeh, F C				
	Genetic structure of forest trees	OPR \$	28,000	NSERC
	Co-investigator with Dean (Agriculture and Forestry): Genetic variation and adaptation . . .			
Type of Award		No.	Amount	Source of Funds
Contracts		11	\$ 448,997	NSERC
Operating		11	\$ 202,357	Other Provincial
Total		22	\$ 651,354	Other Federal
				Other Agencies
				Total
				22 \$ 651,354

Department of Plant Science

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Bailey, A W				
	Effect of grazing on plains rough fescue	OPR \$	10,000	AGCA
	Effect of grazing on forage and beef production from rough fescue rangeland in central Alberta	OPR \$	52,000	ARCA
	The impacts of grazing on the rangeland ecosystem - Thesis support for Anne Naeth	OPR \$	40,500	NOVA
Briggs, K G				
	Growth of Brassica campestris field test	OPR \$	9,000	BONIS
	Plant-soil interactions at low pH, Grande Prairie, July 2-24, 1987	CFC \$	2,645	NSERC
	Co-investigator with Taylor, G J (Science, Botany): Basic and applied aspects of aluminum . . .			

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Hiruki, C	1) Fungus transmission of plant viruses 2) Plant diseases associated with Mollicutes organisms	OPR \$	38,400	NSERC
	Characterization of the agent causing wheat spot mosaic disease in Alberta	OPR \$	31,000	WGRF
Horak, A	Co-investigator with Johnson-Flanagan, A: High pressure liquid chromatography, . . .			
Johnson-Flanagan, A	High pressure liquid chromatography, swinging bucket rotor	EQP \$	12,038	NSERC
King, J R	Fall regrowth potential of some pasture grass species	OPR \$	12,000	AART
	Germination and establishment of pasture grass species	OPR \$	22,000	ARCA
Knowles, N R	Increasing tuber yield and earliness by manipulating the physiological age of potato seed-tubers	OPR \$	65,462	ARCA
	Co-investigator with Tewari, J P: To facilitate joint conduct between . . .			
	Mechanisms of ageing in meristematic and tuber tissues of potato	OPR \$	14,772	NSERC
Spencer, M E	Field trials of methods to induce synchronous germination of dormant weed seeds in Alberta soils	OPR \$	36,735	ARCA
	Ethylene and plants	OPR \$	70,862	NSERC
	Co-investigator with Johnson-Flanagan, A: High pressure liquid chromatography, . . .			
Tewari, J P	Colonization of barley in Alberta by the "biological fertilizers"	OPR \$	10,472	AART
	The mechanism of necrosis in the blackspot of crucifers	OPR \$	10,000	AGCA
	To facilitate joint conduct between the University of Alberta and the Alberta Special Crops and Horticultural Research Centre - Graduate Student Support - Ms. Regina Pluim	OPR \$	9,000	ASCHR
	Co-investigator with Ayer, W A (Science, Chemistry): Investigation of American Leaf . . .			
	Host-parasite interaction in the blackspot disease of rapeseed caused by Alternaria brassicae	OPR \$	15,000	NSERC
Toop, E W	Bedding plant trials, contributions for year 1987/88 ranged from \$50.00 to \$1,000.00	OPR \$	1,960	MISC
Vanden Born, W H	Uptake and mode action of chlorsulfuron (Glean)	OPR \$	13,730	AART
	Brassica campestris and Brassica napus field trials	OPR \$	9,000	BONIS
	Uptake and mode action of chlorsulfuron (Glean)	OPR \$	10,000	DUP
	Behavior and fate of systemic herbicides	OPR \$	20,301	NSERC
	Herbicide field program	OPR \$	750	SANDO
	Enhancement of herbicide uptake with additives	OPR \$	24,300	WGRF
Walton, P D	A comparative study of genetic variation induced by Pan-mixis and tissue culture	OPR \$	10,000	AGCA
	The genetics of embryogenesis in Medicago sativa	OPR \$	10,000	NSERC

<i>Type of Award</i>	<i>No.</i>	<i>Amount</i>	<i>Source of Funds</i>	<i>No.</i>	<i>Amount</i>
Conferences	1	\$ 2,645	NSERC	8	\$ 184,018
Equipment	1	\$ 12,038	Other Provincial	7	\$ 212,399
Operating	25	\$ 547,244	Other Federal	3	\$ 30,000
Total	27	\$ 561,927	Other Agencies	9	\$ 135,510
			Total	27	\$ 561,927

Department of Rural Economy

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Ahmadi-Esfahani, F	Co-investigator with Apedaile, L P: Structural projections for Alberta . . .			
Apedaile, L P	Structural projections for Alberta grain production to year 2001	OPR \$	28,000	ARCA
Bauer, L	Grain and cattle farm data collection	CTR \$	4,800	AGCA
	Co-investigator with Phillips, W E: Returns to farmland investment . . .			
	Co-investigator with Mumey, G A: An estimation of risks and returns . . .			
	Longevity and genetic improvement issues in economic replacement strategies for dairy cattle	OPR \$	17,000	ARCA
	An economic evaluation of tillage management systems in the dark brown soil zone	OPR \$	47,500	ARCA
	An economic rationale for farm land compensation	CTR \$	7,860	AT

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Chase Wilde, L					
	Co-investigator with Wolfe, F H (Food Science): Evaluation of the differential . . .				
Constantino, L F					
	The opportunities for woodlots in Alberta farms	OPR \$	3,675	AART	
	General equilibrium model of the Alberta economy with reference to the forest sector	OPR \$	17,920	AFDRT	
	Report on financial and economic returns from thinnings of lodgepole pine and jack pine	CTR \$	1,524	CFS	
	Continuation of the development and evaluation of the North American timber assessment market model	CTR \$	21,300	CFS	
Hawkins, M H					
	Impact of freer trade with the U.S. on the Alberta egg industry	OPR \$	10,000	AART	
	Impact of freer trade with the U.S. on the Alberta egg industry	OPR \$	14,000	AEFMB	
	The delivery of extension services to Alberta hog producers	OPR \$	12,150	APPM	
Lerohl, M L					
	Co-investigator with Hawkins, M H: Impact of freer trade with the . . .				
	Grain livestock industry	CTR \$	30,000	ADA	
	Co-investigator with Bauer, L: An economic evaluation of tillage . . .				
Mumey, G A					
	An estimation of risks and returns from cropping alternatives	OPR \$	17,000	ARCA	
Murri, D G					
	Co-investigator with Hawkins, M H: The delivery of extension services . . .				
Phillips, W E					
	Co-investigator with Constantino, L F: General equilibrium model of the . . .				
	Hog grading analysis	OPR \$	3,672	APPM	
	Returns to farmland investment in Alberta	OPR \$	17,000	ARCA	
	Co-investigator with Constantino, L F: Continuation of the development . . .				
Veeman, M M					
	Macro-economic influences on Alberta agriculture	OPR \$	22,000	ARCA	
	Market share competition in world wheat markets	OPR \$	27,000	ARCA	
Veeman, T S					
	Co-investigator with Veeman, M M: Market share competition in world . . .				
	Co-investigator with Veeman, M M: Macro-economic influences on Alberta . . .				
	The role of fertilizer, weather, and fertilizer-weather interactions in prairie grain production and productivity	OPR \$	38,000	ARCA	
Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	5	\$ 65,484	Other Provincial	13	\$ 282,955
Operating	14	\$ 274,917	Other Federal	3	\$ 27,624
Total	19	\$ 340,401	Other Agencies	3	\$ 29,822
			Total	19	\$ 340,401

Department of Soil Science

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Chanasyk, D S				
	Co-investigator with Nyborg, M: Long-term influence of tillage, . . .			
	Effects of crop management practices on infiltration	OPR \$	15,000	ARCA
	Factors affecting infiltration of frozen soils	OPR \$	15,000	NSERC
	Highvale reclaimed land soil tilth project	CTR \$	30,589	TAUC
Dudas, M J				
	Fertilizer and soil quality	OPR \$	5,000	AART
	Mobilization of trace elements in weathered fly ash	CTR \$	57,375	ETHUR
	1) Dynamics of heavy metals in soil systems, and 2) Degradation and authigenic formation of soil minerals	OPR \$	24,417	NSERC
	Co-investigator with Pawluk, S: High performance ion/liquid chromatography . . .			
	Co-investigator with Juma, N G: Development of new management systems . . .			
	Fertilizer and soil quality	OPR \$	5,000	WCOF
	Fertilizer and soil quality	OPR \$	5,000	WCOF
Juma, N G				
	Development of new management systems to counteract soil degradation	OPR \$	140,000	NSERC
Mayko, J J				
	Co-investigator with Robertson, J A: Residual effects of previously . . .			

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
McGill, W B				
	Quality Assurance Program	CTR	\$ 10,000	ADA
	To compile and convert to electronic format, compatible with the New Arc/Info software, data existing in soil survey reports, etc.	CTR	\$ 6,325	AGCA
	On site biotechnologies for soil conservation and risk management on luvisolic soils	OPR	\$ 65,000	ARCA
	Controls of soil C and N dynamics	OPR	\$ 17,480	NSERC
	Co-investigator with Dean (Agriculture and Forestry): Forest sciences-forest ecophysiology . . .			
	Co-investigator with Pawluk, S: High performance ion/liquid chromatography . . .			
	Composting crop residues for soil conservation and nutrient supply	OPR	\$ 25,000	WGRF
Nyborg, M				
	A study of fall-applied nitrogen: Time of soil test for nitrogen, incorporation, and banding	OPR	\$ 7,000	AART
	Long-term influence of tillage, straw and nitrogen on soil characteristics and crop yield	OPR	\$ 51,000	ARCA
	Emission of N gases from frozen and thawing soils	OPR	\$ 10,000	NSERC
	Concentration of P in seed and resultant growth and yield (Graduate Student: Zhang Mingchu)	OPR	\$ 9,921	PPI
	To sample the soils and plants to determine the extent and effects of sulphur emissions from the Shell Plant - Pincher Creek	OPR	\$ 4,500	SHELL
	A study of fall-applied nitrogen: Time of soil test for nitrogen, incorporation, and banding	OPR	\$ 7,000	WCOF
	Co-investigator with McGill, W B: Composting crop residues for soil . . .			
Pawluk, S				
	Co-investigator with Dudas, M J: Fertilizer and soil quality . . .			
	Co-investigator with Juma, N G: Development of new management systems . . .			
	High performance ion/liquid chromatography system	EQP	\$ 38,900	NSERC
	Hydrological influences upon soil pedogenesis	OPR	\$ 45,871	NSERC
	Co-investigator with Dudas, M J: Fertilizer and soil quality . . .			
	Co-investigator with McGill, W B: Composting crop residues for soil . . .			
Pluth, D J				
	Goose River forest drainage project	CTR	\$ 19,000	AFLW
	Co-investigator with Dean (Agriculture and Forestry): Forest sciences-forest ecophysiology . . .			
Robertson, J A				
	Residual effects of previously applied P fertilizer on tilled and untilled soils	OPR	\$ 10,000	AART
	Co-investigator with Domier, K W (Agricultural Engineering): Metering and placement of urea . . .			
	Residual effects of previously applied P fertilizer on tilled and untilled soils	OPR	\$ 4,000	COM
	Chloride, a possible deficient nutrient in Alberta soils	OPR	\$ 4,000	PPI
	Residual effects of previously applied P fertilizer on tilled and untilled soils	OPR	\$ 6,000	WCOF
Tewari, J P				
	Co-investigator with Robertson, J A: Residual effects of previously . . .			

Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	5	\$ 123,289	NSERC	7	\$ 291,668
Equipment	1	\$ 38,900	Other Provincial	8	\$ 182,000
Operating	21	\$ 476,189	Other Federal	1	\$ 6,325
Total	27	\$ 638,378	Other Agencies	11	\$ 158,385
			Total	27	\$ 638,378

Faculty of Arts

Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	8	\$ 40,250	NSERC	10	\$ 143,375
Contracts	12	\$ 85,508	SSHRC	35	\$ 452,781
Operating	40	\$ 645,906	Other Provincial	2	\$ 10,800
Research Prizes	1	\$ 60,615	Other Federal	3	\$ 91,615
Total	61	\$ 832,279	Other Agencies	11	\$ 133,708
			Total	61	\$ 832,279

Department of Anthropology

Investigator	Project Title	Award	Amount	Agency	
Asquith, P J	Canada Research Fellowship - East Asian Studies	OPR	\$ 4,000	SSHRC	
Fedigan, L M	Life histories, demography, and reproduction in polygamous primates	OPR	\$ 30,000	NSERC	
Fisher, A D	Young Blood Indians in retrospect	OPR	\$ 16,368	SSHRC	
Freeman, M M	Tradition, community, and common property resource management	OPR	\$ 17,666	SSHRC	
Schweger, C E	Pleistocene paleoecology/stratigraphy of Alaska-Yukon tephra and paleoecology of central Alberta	OPR	\$ 8,000	NSERC	
Willoughby, P R	Canada research fellowship - Prehistoric adaptations at Singida, Tanzania	OPR	\$ 4,000	SSHRC	
Type of Award	No.	Amount	Source of Funds	No.	Amount
Operating	6	\$ 80,034	NSERC	2	\$ 38,000
			SSHRC	4	\$ 42,034
			Total	6	\$ 80,034

Department of Classics

Investigator	Project Title	Award	Amount	Agency	
Fishwick, D	The Imperial Cult in Roman Gaul and the Maritime Alps	OPR	\$ 8,618	SSHRC	
Fracchia, H M	Mingardo Valley (Western Lucania) survey project	OPR	\$ 5,301	SSHRC	
Gualtieri, M	Excavations at Roccagloriosa	OPR	\$ 14,000	SSHRC	
Small, A M	Classical Association of the Canadian West:Eleventh Annual Meeting	CFC	\$ 4,500	SSHRC	
Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	1	\$ 4,500	SSHRC	4	\$ 32,419
Operating	3	\$ 27,919			
Total	4	\$ 32,419			

Department of Comparative Literature

Investigator	Project Title	Award	Amount	Agency
Blodgett, E D	Toward a history of the literary institution in Canada: Conference III: Prefaces and literary manifestos, University of Alberta, Nov 12-14/87	CFC	\$ 7,500	SSHRC
	Toward a history of the literary institution in Canada: Conference II: Questions of funding publishing and distribution, University of Alberta, Apr 9-11/87	CFC	\$ 7,000	SSHRC
Lang, G M	Canada Research Fellowship - African and Caribbean studies	OPR	\$ 4,000	SSHRC

Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	2	\$ 14,500	SSHRC	3	\$ 18,500
Operating	1	\$ 4,000			
Total	3	\$ 18,500			

Department of Economics

Investigator	Project Title	Award	Amount	Agency
Boothe, P M				
	Canadian Macroeconomic Study Group Conference, to be held in Edmonton, Oct 30-Nov 1/87	CFC	\$ 2,750	SSHRC
	Financial market - macro linkages in Canada	OPR	\$ 9,846	SSHRC
Coyte, P C				
	Two-part pricing in space	OPR	\$ 17,848	SSHRC
Lindsey, C R				
	Co-investigator with Coyte, P C: Two-part pricing in space . . .			
Livernois, J				
	Co-investigator with Scarfe, B L: Determinants of exploration and . . .			
Percy, M B				
	Co-investigator with Constantino, L F (Agriculture and Forestry, Rural Economy): General equilibrium model of the . . .			
	Co-investigator with Constantino, L F (Agriculture and Forestry, Rural Economy): Continuation of the development . . .			
Ryan, D L				
	Co-investigator with Scarfe, B L: Determinants of exploration and . . .			
Scarfe, B L				
	Determinants of exploration and development of activity levels	OPR	\$ 6,000	EMRC
Szostak, R W				
	The role of transportation in the Industrial Revolution: A comparison of eighteenth century England and France	OPR	\$ 7,820	SSHRC
von Hohenbalken, B				
	Co-investigator with Coyte, P C: Two-part pricing in space . . .			
West, D S				
	Competition among planned shopping centres: An econometric-spatial analysis	OPR	\$ 7,103	SSHRC

Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	1	\$ 2,750	SSHRC	5	\$ 45,367
Operating	5	\$ 48,617	Other Federal	1	\$ 6,000
Total	6	\$ 51,367	Total	6	\$ 51,367

Department of English

Investigator	Project Title	Award	Amount	Agency
Bishop, E				
	The Creating Word 1987: The Learning and Teaching of English	CFC	\$ 5,500	SSHRC
Grant, R J S				
	The B text of the old English Bede: A linguistic commentary	OPR	\$ 7,022	SSHRC
Kelly, G D				
	Walter Scott and His Influence Conference, to be held in Edmonton, Aug 26-29/87	CFC	\$ 4,000	SSHRC
McMaster, J				
	Body and character in the eighteenth-century novel	PRZ	\$ 60,615	CC
Neuman, S C				
	Co-investigator with Blodgett, E D (Comparative Literature): Toward a history of the literary . . .			
Orrell, J O				
	The interior design of Shakespeare's Globe and Inigo Jone's Cockpit Theatres	OPR	\$ 3,510	SSHRC
Wilson, R R				
	National traditions and international models in contemporary narrative: Canada and Australia	OPR	\$ 7,268	SSHRC

Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	2	\$ 9,500	SSHRC	5	\$ 27,300
Operating	3	\$ 17,800	Other Federal	1	\$ 60,615
Research Prizes	1	\$ 60,615	Total	6	\$ 87,915
Total	6	\$ 87,915			

Department of Germanic Languages

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Prokop, M	To support the KONTAKT '87 Biennial Conference of the Prairie Council on the teaching of German at the University of Alberta, May 22-24/87	CFC	\$ 5,000	SSHRC
Conferences		SSHRC	1 \$ 5,000	

Department of History

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Brown, D H	Canada Research Fellowship - A concise history of Canadian law to 1900	OPR	\$ 4,000	SSHRC	
MacKinnon, S	History of forest protection in the N.W.T.	CTR	\$ 9,258	GNWT	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Contracts	1	\$ 9,258	SSHRC	1	\$ 4,000
Operating	1	\$ 4,000	Other Agencies	1	\$ 9,258
Total	2	\$ 13,258	Total	2	\$ 13,258

Department of Linguistics

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Mos, L P	Co-investigator with Kuiken, D L (Psychology): Dreams and emotional distress . . .				
Nearey, T M	Development of a speech research work station - Joint project with the University of Calgary	CTR	\$ 20,000	BNR	
	Evaluation of speaker and context normalization for vowels	OPR	\$ 40,340	SSHRC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Contracts	1	\$ 20,000	SSHRC	1	\$ 40,340
Operating	1	\$ 40,340	Other Agencies	1	\$ 20,000
Total	2	\$ 60,340	Total	2	\$ 60,340

Department of Music

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Brauner, M P	The Papal Chapel Manuscripts of the late renaissance and early counter-reformation	OPR	\$ 8,254	SSHRC	
Lewis, C	Canadian Music Theory Conference, Mar 18-20/88, U of A, Edmonton, Alta	CFC	\$ 4,000	SSHRC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Conferences	1	\$ 4,000	SSHRC	2	\$ 12,254
Operating	1	\$ 8,254			
Total	2	\$ 12,254			

Department of Political Science

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Dacks, G	The devolution of authority from the Government of Canada to the Governments of Yukon and The Northwest Territories	OPR	\$ 82,000	DCF
Stevenson, G	Canadian federalism in the age of John A. Macdonald	OPR	\$ 7,325	SSHRC
Tupper, A	In support of research for a book entitled 'Privatization, Public Corporations and Public Policy in Canada'	OPR	\$ 2,000	IRPP

Type of Award	No.	Amount	Source of Funds	No.	Amount
Operating	3	\$ 91,325	SSHRC	1	\$ 7,325
			Other Agencies	2	\$ 84,000
			Total	3	\$ 91,325

Department of Psychology *see also Faculty of Science*

Investigator	Project Title	Award	Amount	Agency
Bisanz, G L	Children's use of story schemata: second generation research	OPR	\$ 14,423	NSERC
Bisanz, J	Development of mental arithmetic skills	OPR	\$ 18,000	NSERC
Cornell, E H	Spatial cognition and wayfinding by children	OPR	\$ 12,822	NSERC
	Characteristics of memorable picture-books	OPR	\$ 25,804	SSHRC
Dawson, M R	Figural effects on motion correspondence processing	OPR	\$ 12,000	NSERC
Dixon, P	Basic and complex processes in reading	OPR	\$ 14,423	NSERC
Friedman, A	Multiple resources in cerebral specialization, divided attention and mental rotation	OPR	\$ 16,027	NSERC
Jutai, J W	Event-related brain potential assessment of perceptual-motor function (Transfer from Concordia University, Montreal)	OPR	\$ 10,000	NSERC
Kuiken, D L	Dreams and emotional distress	OPR	\$ 27,190	SSHRC
Rule, B G	Co-investigator with Dobbs, A R (Science): Minor head injury and accident . . .			
	Co-investigator with Dobbs, A R (Science): A longitudinal study of memory . . .			
	The development of a schema and text processing	OPR	\$ 7,680	NSERC
	Environmental influences on the aged population in an institution	OPR	\$ 45,877	SSHRC
Smythe, W E	Canada Research Fellowship - Mental representations	OPR	\$ 4,000	SSHRC

Type of Award	No.	Amount	Source of Funds	No.	Amount
Operating	12	\$ 208,246	NSERC	8	\$ 105,375
			SSHRC	4	\$ 102,871
			Total	12	\$ 208,246

Department of Religious Studies

Investigator	Project Title	Award	Amount	Agency
Waida, M	Shamanism on Okinawa Islands, southern Japan	OPR	\$ 6,780	SSHRC
Operating		SSHRC	1	\$ 6,780

Department of Romance Languages

Investigator	Project Title	Award	Amount	Agency
Dube, P J	Co-investigator with Allaire, G (Saint-Jean): Septieme colloque du CEFCO: Ecriture . . .			
Purdy, A G	Co-investigator with Blodgett, E D (Comparative Literature): Toward a history of the literary . . .			
Rochet, B	Co-investigator with Nearey, T M (Linguistics): Evaluation of speaker and context . . .			

Department of Sociology

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Hackler, J C	University of Alberta's Centre of Criminological Research	CTR \$	25,000	SGC
Hartnagel, T F	A longitudinal study of youth employment, underemployment and unemployment in three Canadian cities	OPR \$	67,911	SSHRC
Kent, S A	Sects and cults in Canada, 1970-1980: A Resource mobilization perspective	OPR \$	10,327	SSHRC
Krahn, H	1988 All Alberta study	CTR \$	900	ACOC
	1988 All Alberta study	CTR \$	8,100	AECC
	1988 Edmonton area study	CTR \$	2,000	AID
	1988 All Alberta study	CTR \$	2,700	AT
	1988 Edmonton area study	CTR \$	2,750	EBH
	1988 Edmonton area study	CTR \$	7,700	EPD
	1988 All Alberta study	CTR \$	900	GLAS
	1988 All Alberta study	CTR \$	1,800	JHSA
	1988 Edmonton area study	CTR \$	4,400	UWIN
Krotki, K	Collaborative study with Prof Balakrishnan of Univ of Western Ont and Mme Lapierre-Adamcyk of Univ of Montreal : Canadian national fertility study - \$90,052	OPR		SSHRC
Salamon, E D	Sexual offences against children and youths in Edmonton 1980-1985	OPR \$	30,353	SSHRC

Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	10	\$ 56,250	SSHRC	3	\$ 108,591
Operating	3	\$ 108,591	Other Provincial	2	\$ 10,800
Total	13	\$ 164,841	Other Federal	1	\$ 25,000
			Other Agencies	7	\$ 20,450
			Total	13	\$ 164,841

Faculty of Business

Type of Award	No.	Amount	Source of Funds	No.	Amount
Operating	6	\$ 96,163	NSERC	1	\$ 3,979
Total	6	\$ 96,163	SSHRC	4	\$ 69,584
			Other Federal	1	\$ 22,600
			Total	6	\$ 96,163

Department of Finance and Management Science

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Talwar, P P	Robust estimation in multiplicative error-in-variable models with application to financial data	OPR \$	3,979	NSERC
Operating		NSERC	1 \$	3,979

Department of Marketing and Economic Analysis

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Chambers, E J				
	Co-investigator with Cullen, D M (Organizational Analysis): Female graduates of western Canadian . . .			
Louviere, J J				
	Choice of bicycle trails in the Chicago area with special reference to nested and/or hierarchal choice processes and joint continuous discrete dependent responses - Principal Investigator Dr. Donald A. Anderson, University of Wyoming \$58,080 (Dr. Louviere is co-investigator)	OPR		USFS
Reschenthaler, G B				
	Competitive strategy formulation and implementation in the Canadian airline industry	OPR	\$ 20,150	SSHRC
Operating			1 \$ 20,150	SSHRC

Department of Organizational Analysis

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Cullen, D M					
	Co-investigator with Hall, A (Physical Education and Recreation, Physical Education and Sport Studies): The status of women in selected . . .				
	Female graduates of western Canadian business schools	OPR	\$ 4,150	SSHRC	
Gephart, R P					
	The organizational basis of industrial accidents in Canada	OPR	\$ 25,000	SSHRC	
Greenwood, R					
	Co-investigator with Hinings, C R: Archetypes, tracks and the dynamics . . .				
Hinings, C R					
	Planning, organization and implementation in high performance delivery systems	OPR	\$ 22,600	FAS	
	Archetypes, tracks and the dynamics of strategic change and stability	OPR	\$ 20,284	SSHRC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Operating	4	\$ 72,034	SSHRC	3	\$ 49,434
			Other Federal	1	\$ 22,600
			Total	4	\$ 72,034

Faculty of Dentistry

Type of Award	No.	Amount	Source of Funds	No.	Amount
Equipment	1	\$ 21,308	AHFMR	1	\$ 21,308
Operating	9	\$ 327,865	MRC	7	\$ 270,953
Total	10	\$ 349,173	Other Agencies	2	\$ 56,912
			Total	10	\$ 349,173

Faculty of Dentistry

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Dean					
Hargreaves, J A	General research grant to the Dean for the support of research in the Faculty of Dentistry	OPR	\$ 15,000	MRC	
	Nutritional study on elderly Edmontonians	OPR	\$ 25,000	KIB	
	Dental, dietary and nutritional survey of a group of elderly people in Edmonton	OPR	\$ 31,912	KSC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Operating	3	\$ 71,912	MRC	1	\$ 15,000
			Other Agencies	2	\$ 56,912
			Total	3	\$ 71,912

Department of Oral Biology

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Pearson, C H	Co-investigator with Scott, P G: Connective tissue biochemistry . . .				
Scott, P G	Connective tissue biochemistry and physiology	EQP	\$ 21,308	AHFMR	
	Proteoglycans of non-cartilage tissue	OPR	\$ 64,921	MRC	
	Maintenance grant - amino acid analyzer technologist	OPR	\$ 30,911	MRC	
	Collagen-degrading proteinases from cells of human gingiva	OPR	\$ 63,476	MRC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Equipment	1	\$ 21,308	AHFMR	1	\$ 21,308
Operating	3	\$ 159,308	MRC	3	\$ 159,308
Total	4	\$ 180,616	Total	4	\$ 180,616

Department of Restorative Dentistry

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Holland, G R	Oral nerves and their response to damage	OPR \$	58,310	MRC
Operating		MRC	1 \$	58,310

Department of Stomatology

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Eggert, F M	Application of immunochemistry to the diagnosis of periodontics	OPR \$	27,060	MRC
	Co-investigator with Scott, P G (Oral Biology): Maintenance grant - amino acid . . .			
	The reaction of secretory antibodies with periodontal pathogens	OPR \$	11,275	MRC
Operating		MRC	2 \$	38,335

Faculty of Education

Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	2	\$ 7,500	NSERC	1	\$ 6,946
Contracts	3	\$ 135,133	SSHRC	6	\$ 28,353
Operating	14	\$ 287,032	Other Provincial	2	\$ 129,133
Total	19	\$ 429,665	Other Federal	3	\$ 253,270
			Other Agencies	7	\$ 11,963
			Total	19	\$ 429,665

Department of Educational Administration

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Bumbarger, C S	Adaptive change and leadership in a psychiatric institution, Student - M. Abt	OPR \$	1,000	AARN
Miklos, E	Practice and study of educational administration	OPR \$	667	UCEA
Nixon, M	Women and leadership in Alberta public schools: An exploration of the influence of covert discrimination	OPR \$	510	AACES
Ward, K L	An assessment of the potential for involvement of registered nursing assistants in the provision of home care in Alberta	CTR \$	6,000	ECCO

Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	1	\$ 6,000	Other Agencies	4	\$ 8,177
Operating	3	\$ 2,177			
Total	4	\$ 8,177			

Department of Educational Foundations

Investigator	Project Title	Award	Amount	Agency
Bacchus, M K	Co-investigator with Torres, C: A comparative study of adult education . . .			
Card, B Y	The Mormon presence in Canada: 1830-1887-1987. A North American ethno- religious people in Canadian cultures, University of Alberta, May 6-9/87.	CFC	\$ 5,500	SSHRC
Rooke, P T	Canada Research Fellowship - Missionary education of slaves and freedom (British West Indies)	OPR	\$ 4,000	SSHRC
Torres, C	A comparative study of adult education in Tanzania, Mexico and Canada (the province of Alberta)	OPR	\$ 225,000	IDRC
Urion, C	Classroom interaction and student performance (India/Canada)	OPR	\$ 24,060	IDRC
	Visit of Dr. Shivaneekar of Pune, India, for the purpose of designing a collaborative research project	OPR	\$ 4,210	IDRC

Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	1	\$ 5,500	SSHRC	2	\$ 9,500
Operating	4	\$ 257,270	Other Federal	3	\$ 253,270
Total	5	\$ 262,770	Total	5	\$ 262,770

Department of Educational Psychology

Investigator	Project Title	Award	Amount	Agency
Gupta, R K	Polydrug abuse, juvenile delinquency and parental nurturance	OPR	\$ 1,500	AACES
Rodda, M	Communication skills in deaf children and adults	OPR	\$ 6,946	NSERC
Sawatzky, D D	Children in re-married families. The functioning of children in re-married families	OPR	\$ 5,000	SSHRC
Schmidt, W H	William Stern's critical analysis of psychology around 1900 with special emphasis on his assessment of Herman Ebbinghaus and Gustav Theodor Fechner	OPR	\$ 1,000	AACES
Sobsey, R J	Severe and Multiple Handicap Alternative Futures Conference, University of Alberta, May 6-8/87	CFC	\$ 2,000	SSHRC
Yewchuk, C R	Career programming for gifted females	OPR	\$ 5,000	SSHRC

Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	1	\$ 2,000	NSERC	1	\$ 6,946
Operating	5	\$ 19,446	SSHRC	3	\$ 12,000
Total	6	\$ 21,446	Other Agencies	2	\$ 2,500
			Total	6	\$ 21,446

Instructional Technology Center

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Mappin, D A	Microcomputer supported simulations for administrator education	CTR	\$ 50,633	AED
Tang, T T	Production of a series of 6 French language arts programs to be used to inservice elementary French language arts teachers	CTR	\$ 78,500	AED
Contracts	Other Provincial	2	\$ 129,133	

Department of Secondary Education

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Olson, A T	Co-investigator with Sigurdson, S E: Achievement test preparation . . .				
Sigurdson, S E	Achievement test preparation	OPR	\$ 1,286	AACES	
Van Manen, M	Human science pedagogy	OPR	\$ 6,853	SSHRC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Operating	2	\$ 8,139	SSHRC	1	\$ 6,853
			Other Agencies	1	\$ 1,286
			Total	2	\$ 8,139

Faculty of Engineering

Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	30	\$ 1,857,061	NSERC	136	\$ 4,040,461
Equipment	4	\$ 261,703	Other Provincial	23	\$ 1,226,049
Infrastructure	6	\$ 192,220	Other Federal	16	\$ 827,172
Operating	146	\$ 4,010,952	Other Agencies	14	\$ 307,073
Technology Transfer	3	\$ 78,819	Total	189	\$ 6,400,755
Total	189	\$ 6,400,755			

Faculty of Engineering

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Dean	In support of the Canadian Center for Arctic and Offshore Engineering Research	OPR	\$ 3,000	BVI
Operating	Other Agencies	1	\$ 3,000	

Department of Chemical Engineering

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Chuang, K T	Research involving a new process for controlling NOx emissions	CTR	\$ 46,700	AECL
	Mass transfer in gas-liquid contactors	OPR	\$ 26,000	NSERC
Crickmore, P J	Analysis of distributed chemical and physical properties of coal	OPR	\$ 23,700	AENR

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Dalla Lana, I G				
	Hydroprocessing of coal-derived liquids	OPR \$	53,000	AENR
	Co-investigator with Wanke, S E: Investigations of catalytic gas-phase . . .			
	Studies of 1) kinetics and equilibrium in acidgas processing, 2) hydroprocessing of heavy gas oils, and 3) IR and TPD applications in heterogeneous catalysis	OPR \$	30,939	NSERC
	Co-investigator with Gray, M R: Fourier - Transform infra-red spectrometer . . .			
	Co-investigator with Wanke, S E: Optimal chemical routes for heavy . . .			
Fisher, D G				
	Computer control of multivariable processes	OPR \$	39,190	NSERC
	Adaptive process control	OPR \$	53,630	NSERC
	Applications of artificial intelligence in the process industries	OPR \$	30,000	NSERC
Gray, M R				
	Liquefaction of coal in natural gas	OPR \$	35,750	AENR
	Structural characterization of heavy oil and bitumen upgrading reactions	CTR \$	66,600	AOSTR
	Co-investigator with Tam, Y K (Pharmacy and Pharmaceutical Sciences): Pharmacokinetics of lidocaine during . . .			
	Co-investigator with Wanke, S E: Investigations of catalytic gas-phase . . .			
	Co-investigator with Hrudey, S E (Civil Engineering): Role of support media in enhancing . . .			
	Fourier - Transform infra-red spectrometer with gas chromatograph	EQP \$	101,371	NSERC
	Co-investigator with Westlake, D W (Science, Microbiology): Technical support for fermentation . . .			
	Chemical kinetics of complex mixtures	OPR \$	20,626	NSERC
	Co-investigator with Wanke, S E: Optimal chemical routes for heavy . . .			
Hayes, R E				
	Numerical modelling of multiphase chemical reactors	OPR \$	13,407	NSERC
Lynch, D T				
	Co-investigator with Wanke, S E: Investigations of catalytic gas-phase . . .			
	Dynamic behavior of chemical and catalytic reactors	OPR \$	23,904	NSERC
Masliyah, J H				
	Use of flotation columns to improve oil recovery from Alberta oil sands	CTR \$	74,670	AOSTR
	Co-investigator with Nandakumar, K: Enhancement of gravity separation . . .			
	Fluid-particles dynamics	OPR \$	35,000	NSERC
Mather, A E				
	Co-investigator with Otto, F D: Gas treating technology . . .			
	Thermodynamic properties of fluids	OPR \$	22,176	NSERC
	Phase equilibria in gas treating solutions	OPR \$	10,900	PAE
Morris, A J				
	Real time computer supervision and control of process systems	OPR \$	17,600	NSERC
	Co-investigator with Fisher, D G: Adaptive process control . . .			
	Co-investigator with Fisher, D G: Applications of artificial intelligence . . .			
Nandakumar, K				
	Enhancement of gravity separation of two-species suspensions	CTR \$	50,730	AOSTR
	Computational and experimental investigation of bifurcation phenomena in flow problems	OPR \$	25,783	NSERC
Otto, F D				
	Gas processing technology/gas-liquid operations	OPR \$	23,000	NSERC
	Gas treating technology	OPR \$	67,400	NSERC
Robinson, D B				
	Vapor-liquid equilibrium in selected binary systems	CTR \$	21,190	AICE
	The phase behavior and properties of selected hydrocarbon - non-hydrocarbon mixtures, particularly those containing carbon dioxide, methanol and/or hydrogen sulfide	OPR \$	40,608	NSERC
Shah, S L				
	Implementation of GPC control algorithm in Dow's VAX or VAXmate computer	CTR \$	15,072	DOW
	Robustness issues in adaptive control	OPR \$	22,500	NSERC
Wanke, S E				
	Investigations of catalytic gas-phase polymerization of ethylene	CTR \$	70,000	NCOR
	Characterization and activity of supported metal catalysts	OPR \$	36,384	NSERC
	Optimal chemical routes for heavy oil upgrading	OPR \$	72,120	NSERC
Wood, R K				
	Dynamics and control of process systems	OPR \$	18,564	NSERC

Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	7	\$ 344,962	NSERC	20	\$ 720,202
Equipment	1	\$ 101,371	Other Provincial	6	\$ 304,450
Operating	23	\$ 742,181	Other Federal	1	\$ 46,700
Total	31	\$ 1,188,514	Other Agencies	4	\$ 117,162
			Total	31	\$ 1,188,514

Department of Civil Engineering

Investigator	Project Title	Award	Amount	Agency
Anderson, K O				
	Influence of asphalt cement properties on the high temperature performance of pavements in Alberta	CTR	\$ 14,000	AT
	Rehabilitation of full-depth asphalt concrete pavements in Alberta	CTR	\$ 29,674	AT
	Evaluation of asphalt cements for low temperature performance	OPR	\$ 8,000	IOL
	Recycling of asphalt pavements	OPR	\$ 13,000	NSERC
Chan, D H				
	Co-investigator with Kaiser, P K: Numerical simulation of room 209 . . .			
	Co-investigator with Morgenstern, N R: Coal research grant program - Deformation . . .			
	Finite element analysis of strain softening soil and shear band deformation	OPR	\$ 12,000	NSERC
	Co-investigator with Morgenstern, N R: Geotechnical laboratories - University . . .			
Cheng, J J R				
	Performance of structural wood panels under concentrated static loads	CTR	\$ 10,000	ARC
	Lateral and local instability of coped beams	OPR	\$ 11,520	NSERC
Cruden, D M				
	A landslide overview map of Alberta - Phase II	CTR	\$ 10,000	AE
	Geotechnical characterization of materials in slope movements in the Cordillera	OPR	\$ 8,000	EMRC
	Co-investigator with Morgenstern, N R: Geotechnical laboratories - University . . .			
Eisenstein, Z				
	Slope stability (Brazil)	OPR	\$ 61,140	IDRC
	(1) Underground openings in soft ground (2) Tunnels and shafts in oil sands (3) Effective stresses around excavations	OPR	\$ 39,000	NSERC
	Co-investigator with Morgenstern, N R: Geotechnical laboratories - University . . .			
Elwi, A E				
	1) Thin-walled stiffened steel tubes under transverse loads and 2) Numerical prediction of hopper loads	OPR	\$ 14,650	NSERC
Gerard, R				
	River, lake and offshore ice processes	OPR	\$ 19,200	NSERC
Hatzinikolas, M				
	Research in masonry veneer walls	OPR	\$ 12,000	NSERC
Hrudey, S E				
	Risk assessment in water treatment	OPR	\$ 3,500	CE
	Hazardous waste management and risk assessment	OPR	\$ 33,500	NSERC
	Role of support media in enhancing anaerobic biotreatment of phenolics	OPR	\$ 46,200	NSERC
	Co-investigator with Jordan, R B (Science, Chemistry): Mass spectrometry service laboratory . . .			
	Environmental process biotechnology laboratory	INF	\$ 57,600	NSERC
Hrudey, T M				
	Ice loads on structures	OPR	\$ 12,000	NSERC
Huck, P M				
	A study using computer software to model the performance of carbon absorbers in a large Canadian drinking water treatment plant	CTR	\$ 7,824	HWC
	Computer modelling of adsorption of mutagens on XAD-2 resin	CTR	\$ 49,168	HWC
	Use of biological processes in drinking water treatment	CTR	\$ 113,524	NRC
	Removal of organics from drinking water	OPR	\$ 24,000	NSERC
	Development of a new process for removal of radium-226 from uranium tailings decants	TTR	\$ 24,600	NSERC
	Co-investigator with Hrudey, S E: Environmental process biotechnology . . .			
	Bacterial growth rate measurement apparatus and drinking water pilot plant refurbishment	EQP	\$ 88,016	NSERC
	Process optimization for biological treatment of drinking water	OPR	\$ 134,106	NSERC
Hunt, J D				
	Urban travel behavior modelling	OPR	\$ 15,000	NSERC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Kaiser, P K				
	Numerical simulation of room 209 instrument ring	CTR \$	59,558	AECL
	Rupture mechanisms of underground openings	OPR \$	7,741	NSERC
	Co-investigator with Morgenstern, N R: Geotechnical laboratories - University . . .			
Kennedy, D J L				
	Bolted joints of corrugated steel culverts	CTR \$	33,976	AT
	Transversely loaded clamped steel plates. Composite steel-concrete trusses	OPR \$	37,000	NSERC
	A project to improve the bridge evaluation model	CTR \$	41,600	SHT
	Flexural strength of concrete-filled steel hollow structural sections	OPR \$	10,655	SSEF
Knettig, E				
	Co-investigator with Hrudey, S E: Environmental process biotechnology . . .			
	Anaerobic microbial degradation of chlorinated phenols	OPR \$	10,000	NSERC
Kulak, G L				
	Large-diameter tubes loaded in shear or in combined shear and bending	OPR \$	30,720	NSERC
Longworth, J				
	Behavior of masonry structures	OPR \$	11,520	NSERC
MacGregor, J G				
	Strength and stability of reinforced concrete structures	OPR \$	62,400	NSERC
	Co-investigator with Kennedy, D J L: A project to improve the bridge . . .			
Morgenstern, N R				
	Coal research grant program - Deformation and progressive failure of open pit mine highwall	OPR \$	25,188	AENR
	Co-investigator with Scott, J D: Geotechnical and thermal testing . . .			
	Co-investigator with Sego, D C: Sample preparation of sand containing . . .			
	Geotechnical behaviour of permafrost, oil sands and other natural materials	OPR \$	100,160	NSERC
	Geotechnical laboratories - University of Alberta	INF \$	11,000	NSERC
Murray, D W				
	Prediction of structural behaviour	OPR \$	26,000	NSERC
Peterson, A E				
	Feasibility study for an aggregate information system - Alberta	CTR \$	14,728	AT
	Nahanni rock slide - digital model	CTR \$	1,500	EMRC
Peterson, A W				
	Channels formed in sediment	OPR \$	18,528	NSERC
Rajaratnam, N				
	Hydraulics of fishways: effluent discharges into lakes and rivers, LDA measurements, and numerical simulations in hydraulics	OPR \$	43,104	NSERC
Scanlon, A				
	Serviceability of concrete structures	OPR \$	18,000	NSERC
	Co-investigator with Kennedy, D J L: A project to improve the bridge . . .			
Scott, J D				
	Geomechanical laboratory testing program	OPR \$	80,000	AOSTR
	Co-investigator with Kerr, N (Home Economics, Clothing and Textiles): Well sand control with geotextile . . .			
	Geotechnical and thermal testing of oil sands	CTR \$	147,756	AOSTR
	Devon test fill	CTR \$	34,507	AT
	Core sampler for oil sands and heavy oil formations	OPR \$	75,340	NSERC
	Consolidation of oil sands sludge, soil-geosynthetic systems	OPR \$	31,000	NSERC
	Co-investigator with Morgenstern, N R: Geotechnical laboratories - University . . .			
	Testing program on gas in oil sands	CTR \$	100,156	SCL
Sego, D C				
	Co-investigator with Scott, J D: Devon test fill . . .			
	Sample preparation of sand containing a gas hydrate - phase 4	CTR \$	27,338	GSC
	Influence of depositional process on physical characteristics of hydraulic fills	OPR \$	8,000	IOL
	Strength and deformation behavior of frozen and unfrozen soil	OPR \$	13,000	NSERC
	Co-investigator with Morgenstern, N R: Geotechnical laboratories - University . . .			
Simmonds, S H				
	Slab column connections	OPR \$	5,000	DCL
	1) Reinforced concrete slabs 2) Shell structures	OPR \$	23,650	NSERC
Smith, D W				
	Disinfection of wastewater using ozone	OPR \$	30,720	NSERC
	Co-investigator with Huck, P M: Process optimization for biological . . .			
	Co-investigator with Hrudey, S E: Environmental process biotechnology . . .			
	Co-investigator with Huck, P M: Bacterial growth rate measurement . . .			
Steffler, P M				
	Turbulent flow in open channels and rivers	OPR \$	16,650	NSERC

Investigator	Project Title	Award	Amount	Agency	
Teply, S	Transportation characteristics of Canadian communities	OPR	\$ 27,840	NSERC	
Thomson, S	Co-investigator with Cruden, D M: A landslide overview map of Alberta . . .				
	Co-investigator with Morgenstern, N R: Coal research grant program - Deformation . . .				
	Engineering characteristics and behaviour of stiff clay (till) soft rocks and their application to engineering projects	OPR	\$ 10,000	NSERC	
	Co-investigator with Morgenstern, N R: Geotechnical laboratories - University . . .				
Warwaruk, J	Research in structural masonry	OPR	\$ 16,000	NSERC	
Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	16	\$ 695,309	NSERC	37	\$ 1,176,765
Equipment	1	\$ 88,016	Other Provincial	10	\$ 399,829
Infrastructure	2	\$ 68,600	Other Federal	8	\$ 328,052
Operating	42	\$ 1,205,032	Other Agencies	7	\$ 176,911
Technology Transfer	1	\$ 24,600	Total	62	\$ 2,081,557
Total	62	\$ 2,081,557			
Department of Electrical Engineering					
Investigator	Project Title	Award	Amount	Agency	
Baltes, H P	Integrated sensors on silicon	OPR	\$ 60,000	NSERC	
	Microelectronic sensors and materials	OPR	\$ 61,000	NSERC	
Bollinger, K E	Power system control	OPR	\$ 13,600	NSERC	
Brett, M J	Thin films for sensor applications	OPR	\$ 22,000	NSERC	
	Co-investigator with Baltes, H P: Integrated sensors on silicon . . .				
Capjack, C E	Computer simulation codes for laser-plasma applications	OPR	\$ 21,120	NSERC	
	Co-investigator with Seguin, H J J: Digitizing camera system (DCS) . . .				
	Co-investigator with Seguin, H J J: High power laser discharge stabilization . . .				
	The development and use of magnetohydrodynamic computer simulation codes for supporting laser-plasma interaction experiments designed to establish the feasibility of laser driven inertial fusion	OPR	\$ 44,900	NSERC	
	Co-investigator with Offenberger, A A: KrF laser facility . . .				
Cervenak, M R	Co-investigator with Seguin, H J J: High power laser discharge stabilization . . .				
	Co-investigator with Seguin, H J J: Digitizing camera system (DCS) . . .				
	Mode of Stabalization of a Multikilowatt C.W. CO2 Laser	OPR	\$ 19,200	NSERC	
Cheng, Z	Co-investigator with Seguin, H J J: High power laser discharge stabilization . . .				
Christensen, G S	Optimization methods applied to electrical power systems	OPR	\$ 25,800	NSERC	
Chute, F S	Electrical heating of oil sand reservoirs	CTR	\$ 95,000	AOSTR	
	Electromagnetic techniques in the in-situ recovery of hydrocarbon materials	OPR	\$ 29,568	NSERC	
Englefield, C G	Optical fibre communication systems	OPR	\$ 11,904	NSERC	
Fedosejevs, R	UV laser - plasma research	OPR	\$ 40,560	NSERC	
	Co-investigator with Offenberger, A A: KrF laser technology and fusion . . .				
	Co-investigator with Offenberger, A A: KrF laser facility . . .				
Filanovsky, I	Circuit techniques for integrated solid state sensors	OPR	\$ 17,280	NSERC	
Girczyc, E F	STICM: An IC design environment including automated checking and synthesis	OPR	\$ 16,000	NSERC	
Goud, P A	Coding and modulation for optical fiber communications	OPR	\$ 16,700	NSERC	
Gourishankar, V G	Co-investigator with Rink, R E: Optimized microprocessor control . . .				
	Robotics control: Heat pump control	OPR	\$ 18,500	NSERC	
James, C R	Laser-plasma interaction processes	OPR	\$ 11,500	NSERC	

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Joerg, W B	Interactive framework for an integrated (VLSI) design environment	OPR \$	21,216	NSERC
Kingma, Y J	Co-investigator with Bowes, K L (Medicine, Surgery and Clinical Surgery): G I motility studies . . .			
	Electrical and mechanical activity of the digestive tract: Modeling, instrumentation and analysis. Robotic aids for quadriplegics	OPR \$	16,800	NSERC
Koval, D O	Theoretical modelling of power system disturbances and microelectronic systems	OPR \$	10,000	NSERC
Krzymien, W A	Nonlinear equalization systems for high speed digital transmission	OPR \$	11,194	NSERC
Landecker, T L	Radio astronomy instrumentation development and Supernova remnant research	OPR \$	14,100	NSERC
Lawson, R P W	Low energy ion implantation/high vacuum technology	OPR \$	11,700	NSERC
Marchand, R	Modelling of laser-plasma interactions	OPR \$	3,319	NSERC
	Co-investigator with Capjack, C E: The development and use of magnetohydrodynamic . . .			
	Co-investigator with Offenberger, A A: KrF laser facility . . .			
McMullin, J N	University of Alberta integrated optics laboratory	EQP \$	39,570	NSERC
	Improvement in coupling of semiconductor lasers to single mode fibers	OPR \$	13,248	NSERC
Merchant, V	Co-investigator with Seguin, H J J: High power laser discharge stabilization . . .			
	Co-investigator with Seguin, H J J: Digitizing camera system (DCS) . . .			
Mowchenko, J T	Placement and routing algorithms for cell-based integrated circuit design	OPR \$	14,784	NSERC
Nikumb, N	Co-investigator with Seguin, H J J: High power laser discharge stabilization . . .			
	Co-investigator with Seguin, H J J: Digitizing camera system (DCS) . . .			
Offenberger, A A	KrF laser technology and fusion research	OPR \$	140,000	NSERC
	High intensity laser/plasma interactions	OPR \$	86,400	NSERC
	KrF laser facility	INF \$	67,800	NSERC
Rink, R E	Optimized microprocessor control of heat pump/heat storage systems	OPR \$	10,000	EMRC
	Information processing in feedback control	OPR \$	11,232	NSERC
Ristic, L	Silicon sensor technology	OPR \$	18,700	NSERC
	Co-investigator with Baltes, H P: Integrated sensors on silicon . . .			
Robinson, A M	Absorption in CO2 at elevated temperatures and pressures	OPR \$	17,800	NSERC
	Co-investigator with Seguin, H J J: High power laser discharge stabilization . . .			
Routledge, D	Radio synthesis mapping of Supernova remnants, and development of low-noise receivers	OPR \$	13,920	NSERC
	Co-investigator with Vaneldik, J F: Low-noise microwave amplifier development . . .			
Schmidt-Weinmar, H G	Electro-optics of silicon-germanium superlattices	OPR \$	12,900	NSERC
Seguin, H J J	High powered laser technology and laser materials science and processing	OPR \$	66,500	NSERC
	Digitizing camera system (DCS)	EQP \$	32,746	NSERC
	High power laser discharge stabilization with magnetic fields	OPR \$	60,000	NSERC
Smy, P R	The use of electrically induced turbulence in combustion	OPR \$	60,000	NSERC
	Combustion physics	OPR \$	52,954	NSERC
	Co-investigator with Seguin, H J J: High power laser discharge stabilization . . .			
Stromsmoe, K A	Integrated circuit oscillators for instrumentation applications	OPR \$	5,000	NSERC
Tinga, W R	Microwave applicator design and microwave measurements	OPR \$	14,000	NSERC
Tulip, J	Laser Applications and Engineering Research Institute Limited	CTR \$	300,000	DRIE
	Endoscopic laser systems	OPR \$	80,000	NSERC
	High powered lasers, medical application	OPR \$	46,656	NSERC
Vaneldik, J F	Low-noise microwave amplifier development laboratory	INF \$	34,700	NSERC
	Radio astronomy receiving system development, supernova remnant studies	OPR \$	15,000	NSERC

Investigator	Project Title	Award	Amount	Agency	
Vermeulen, F E					
	Co-investigator with Chute, F S: Electrical heating of oil sand . . .				
	Use of electromagnetic heating for the in-situ recovery of fossil fuels	OPR	\$ 30,500	NSERC	
Voss, W A G					
	Microwave power and instrumentation	OPR	\$ 27,168	NSERC	
Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	2	\$ 395,000	NSERC	47	\$ 1,479,539
Equipment	2	\$ 72,316	Other Provincial	1	\$ 95,000
Infrastructure	2	\$ 102,500	Other Federal	2	\$ 310,000
Operating	44	\$ 1,314,723	Total	50	\$ 1,884,539
Total	50	\$ 1,884,539			
Department of Mechanical Engineering					
Investigator	Project Title	Award	Amount	Agency	
Bellow, D G					
	Sucker rod development for crude oil production	OPR	\$ 8,000	IOL	
	Static and dynamic behavior of machine elements	OPR	\$ 21,190	NSERC	
Budney, D R					
	Co-investigator with Moreau, M J (Medicine, Medicine and Clinical Medicine): Experimental evaluation of spinal . . .				
	Reinforced openings/fracture mechanics	OPR	\$ 11,940	NSERC	
Checkel, M D					
	Turbulence - combustion interaction for spark ignition engines	OPR	\$ 14,680	NSERC	
Cheng, K C					
	Studies of cold regions and convective heat transfer problems	OPR	\$ 37,350	NSERC	
Colbourne, J R					
	Gear geometry and tooth strength	OPR	\$ 17,682	NSERC	
Craggs, A					
	Finite element acoustics	OPR	\$ 21,080	NSERC	
	A computer program for duct and enclosure acoustics	OPR	\$ 45,820	NSERC	
	Co-investigator with Faulkner, M G: Mechanical engineering acoustics . . .				
Dale, J D					
	Energy conservation in housing	OPR	\$ 80,000	AENR	
	Combustion ignition studies and spark ignition engine performance	OPR	\$ 21,596	NSERC	
Ellyin, F					
	Materials response and reliability of components under various states of stress and environments	OPR	\$ 46,560	NSERC	
Faulkner, M G					
	Hearing protection device evaluation	OPR	\$ 5,000	ACOH	
	Mechanics of dental problems/acoustical testing techniques	OPR	\$ 21,080	NSERC	
	Mechanical engineering acoustics and noise unit	INF	\$ 9,120	NSERC	
	Co-investigator with Craggs, A: A computer program for duct and . . .				
Forest, T W					
	Co-investigator with Gates, E M: Marine icing wind tunnel . . .				
	Phase changes in liquids and porous media	OPR	\$ 18,244	NSERC	
Gates, E M					
	Co-investigator with Lozowski, E P (Science, Geography): Marine icing . . .				
	Marine icing wind tunnel	INF	\$ 12,000	NSERC	
	A waterjet evacuation tool	TTR	\$ 8,664	NSERC	
	Modelling of atmospheric icing of structures	OPR	\$ 14,680	NSERC	
Haddow, J B					
	Studies in non-linear wave propagation	OPR	\$ 22,240	NSERC	
Kennedy, J S					
	Elastohydrodynamic lubrication of soft materials. Blood flow to the kidneys	OPR	\$ 9,710	NSERC	
Lipsett, A W					
	Dynamic response of offshore structures in waves and currents	OPR	\$ 14,910	NSERC	
Lock, G S H					
	Co-investigator with Lozowski, E P (Science, Geography): Marine icing . . .				
	Co-investigator with Lozowski, E P (Science, Geography): Instrumentation for the measurement . . .				
	(1) Heat transfer near partially submerged/buried tubes (2) Convective eversion	OPR	\$ 15,120	NSERC	
	Co-investigator with Gates, E M: Marine icing wind tunnel . . .				
Mioduchowski, A					
	Vibrations of elastic elements of media	OPR	\$ 19,028	NSERC	

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Rodkiewicz, C M	Arterial blood flow: lubrication	OPR	\$ 29,090	NSERC
Simms, B W	Information processing model of technical organizations	OPR	\$ 9,600	NSERC
Toogood, R W	Industrial robotics - Dynamic simulation and motion planning	OPR	\$ 12,457	NSERC
Varty, R L	Measurement of two-phase flows	OPR	\$ 16,000	NSERC
Wilson, D J	Predicting exposure hazards from toxic gas releases	OPR	\$ 38,400	ACOH
	Atmospheric pollution dispersion, turbulent mixing, air infiltration into buildings	OPR	\$ 30,882	NSERC
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i> <i>Amount</i>
Infrastructure	2	\$ 21,120	NSERC	25 \$ 500,723
Operating	26	\$ 602,339	Other Provincial	3 \$ 123,400
Technology Transfer	1	\$ 8,664	Other Agencies	1 \$ 8,000
Total	29	\$ 632,123	Total	29 \$ 632,123

Department of Mining, Metallurgical and Petroleum Engineering

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Barron, K	Modelling and analysis of outbursts at #26 Colliery Glace Bay, Nova Scotia	OPR	\$ 6,000	EMRC
	Design criteria for pillars in coal mines	OPR	\$ 18,528	NSERC
Bentsen, R G	Analysis of the displacement of one fluid by another	OPR	\$ 18,000	NSERC
Berkowitz, N	Generation of synthetic oils from 'unconventional' sources	OPR	\$ 32,349	NSERC
Etsell, T H	Ceramic electrolytes and metal extraction from fly ash	OPR	\$ 18,000	NSERC
	Co-investigator with Scarfe, C M (Science, Geology): High-pressure laboratory for research . . .			
	Extractive metallurgy	OPR	\$ 2,000	WMJ
Farouq Ali, S M	Mobility control	CTR	\$ 127,460	AOSTR
	Scaled model studies of the immiscible carbon dioxide flooding process	CTR	\$ 120,660	AOSTR
	Realistic simulation of formation fracturing during steam injection operations and performance prediction	CTR	\$ 55,250	AOSTR
	Steam injection experiments in a scaled physical model - Phase II	CTR	\$ 39,420	EMRC
	Steam injection experiments in a scaled physical model - Phase III	CTR	\$ 79,000	EMRC
Flintoff, B C	Co-investigator with Plitt, L R: Laboratory simulation of coal flotation . . .			
Golosinski, T S	Investigations into continuous selective surface mining technology	OPR	\$ 6,000	EMRC
	Diggability of plains overburdens with bucketwheel excavators	OPR	\$ 14,000	NSERC
	Oil sand conveying	TTR	\$ 45,555	NSERC
Ivey, D G	Electron microscopy characterizations of semiconductor devices	OPR	\$ 16,800	NSERC
Plitt, L R	Laboratory simulation of coal flotation	OPR	\$ 12,000	EMRC
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i> <i>Amount</i>
Contracts	5	\$ 421,790	NSERC	7 \$ 163,232
Operating	10	\$ 143,677	Other Provincial	3 \$ 303,370
Technology Transfer	1	\$ 45,555	Other Federal	5 \$ 142,420
Total	16	\$ 611,022	Total	16 \$ 611,022

Faculty of Extension

Type of Award	No.	Amount	Source of Funds	No.	Amount
Infrastructure	1	\$ 3,950	Other Agencies	1	\$ 3,950
Total	1	\$ 3,950	Total	1	\$ 3,950

Faculty of Extension

Investigator	Project Title	Award	Amount	Agency
Bray, C	Title word index - Canadian women's periodicals	INF	\$ 3,950	CRIAW
Lamble, W	Co-investigator with Hawkins, M H (Agriculture and Forestry, Rural Economy): The delivery of extension services . . .			

Faculty of Home Economics

Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	1	\$ 6,049	NSERC	6	\$ 259,605
Contracts	1	\$ 36,256	SSHRC	1	\$ 22,386
Operating	14	\$ 499,812	Other Provincial	4	\$ 197,456
Total	16	\$ 542,117	Total	16	\$ 542,117

Department of Clothing and Textiles

Investigator	Project Title	Award	Amount	Agency
Crown, E M	Systematic assessment of protective clothing for Alberta workers	OPR	\$ 73,200	ACOH
	Evaluation of protective work wear for agricultural workers	OPR	\$ 45,000	ARCA
Kerr, N	Well sand control with geotextile filters: Feasibility study	CTR	\$ 36,256	AOSTR
	Co-investigator with Crown, E M: Evaluation of protective work wear . . .			
Lambert, A	Replication costumes: Their effect on children's cognitive and affective response in an historic site environment	OPR	\$ 1,500	AMUSA
Richards, E A	Co-investigator with Kerr, N: Well sand control with geotextile . . .			
	Co-investigator with Scott, J D (Engineering, Civil Engineering): Devon test fill . . .			
Rigakis, K B	Co-investigator with Crown, E M: Systematic assessment of protective . . .			

Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	1	\$ 36,256	Other Provincial	3	\$ 154,456
Operating	3	\$ 119,700	Other Agencies	1	\$ 1,500
Total	4	\$ 155,956	Total	4	\$ 155,956

Department of Family Studies

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Hurlbut, N L				
	Co-investigator with Kieren, D K: Problem solving phasing in families . . .			
Kieren, D K				
	Problem solving phasing in families with an adolescent diabetic	OPR \$	22,386	SSHRC
Morrison, F J				
	"Readin', 'Ritin and 'Rithmetic: Children's learning of basic skills" Conference in Edmonton, Alberta, May, 1988	CFC \$	6,049	NSERC
	Word learning in reading disabled children	OPR \$	22,856	NSERC
Type of Award				
	<i>No.</i>	<i>Amount</i>	Source of Funds	
Conferences	1 \$	6,049	NSERC	2 \$
Operating	2 \$	45,242	SSHRC	1 \$
Total	3 \$	51,291	Total	3 \$
				51,291

Department of Foods and Nutrition

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Basu, T K				
	Dental, dietary and nutritional survey of a group of elderly people in Edmonton	OPR \$	3,270	KSC
Clandinin, M T				
	Modulation of adipocyte insulin receptor functions by changes in diet fat composition	OPR \$	47,000	CDA
	Co-investigator with Thomson, A B R (Medicine, Medicine and Clinical Medicine): Critical period programming . . .			
	Collaborative research	OPR \$	400	NORAC
	Modulation of membrane structure and function by diet fat	OPR \$	58,500	NSERC
	Demonstration of the in vivo significance of diet induced alterations in membrane structure and function in man	OPR \$	114,000	NSERC
Hawrysh, Z J				
	Quality evaluations of antioxidant treated canola oils	OPR \$	43,000	ARCA
	Quality evaluations of antioxidant treated canola oils	OPR \$	10,500	CCC
	Studies of canola oil stability	OPR \$	38,200	NSERC
Johnston, J L				
	Neuroendocrine regulation of energy balance	OPR \$	20,000	NSERC
Type of Award				
	<i>No.</i>	<i>Amount</i>	Source of Funds	
Operating	9 \$	334,870	NSERC	4 \$
			Other Provincial	1 \$
			Other Agencies	4 \$
			Total	9 \$
				334,870

Faculty of Law

Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Infrastructure	4 \$	109,801	Other Agencies	4 \$	109,801
Total	4 \$	109,801	Total	4 \$	109,801

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Christian, T J				
	Co-investigator with Lown, P J M: Communications and labour law database . . .			
	Charter of Rights database	INF	\$ 33,968	ALF
Elman, B P				
	Co-investigator with Christian, T J: Charter of Rights database . . .			
Lown, P J M				
	Communications and labour law database	INF	\$ 7,763	ALF
MacPherson, L V				
	Alberta Case Locator database	INF	\$ 27,370	ALF
McLellan, A A				
	Co-investigator with Christian, T J: Charter of Rights database . . .			
Robertson, G L				
	Health Law database (through Health Law Institute)	INF	\$ 40,700	ALF

Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	7	\$ 125,900	AHFMR	48	\$ 4,818,119
Contracts	10	\$ 945,077	MRC	88	\$ 6,236,403
Equipment	20	\$ 1,328,433	NSERC	8	\$ 462,792
Infrastructure	1	\$ 12,000	SSHRC	1	\$ 37,509
Operating	201	\$ 14,373,126	Other Provincial	16	\$ 1,140,295
Technology Transfer	2	\$ 295,000	Other Federal	4	\$ 216,532
Total	241	\$ 17,079,536	Other Agencies	76	\$ 4,167,885
			Total	241	\$ 17,079,536

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Dean					
Development of a Biomedical Design Centre & workshop to be located in new AHFMR Research Bldg - Director, Dr. J. Tyler		EQP	\$ 378,800	AHFMR	
General research grant to the Dean for the support of research in the Faculty of Medicine		OPR	\$ 50,000	MRC	
Type of Award	No.	Amount	Source of Funds	No.	Amount
Equipment	1	\$ 378,800	AHFMR	1	\$ 378,800
Operating	1	\$ 50,000	MRC	1	\$ 50,000
Total	2	\$ 428,800	Total	2	\$ 428,800

Investigator	Project Title	Award	Amount	Agency
Finegan, B A	Pharmacokinetics of Diltiazem in patients undergoing coronary artery bypass grafting	OPR	\$ 15,750	NORD
Operating	Other Agencies	1	\$ 15,750	

Department of Anatomy and Cell Biology

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Bagnall, K M	Tissue morphogenesis and pathways for cell migration as evidenced by somatic involvement in vertebral development	OPR	\$ 4,320	NSERC	
Campenot, R B	Control of nerve fiber growth and survival by ions, pharmacological agents, and electrical activity	OPR	\$ 180,000	AHFMR	
Krukoff, T L	Neuropeptides and cardiovascular regulation	OPR	\$ 42,735	MRC	
Miller, F D	Molecular analysis of neuronal development	OPR	\$ 146,598	AHFMR	
Milos, N C	Intrinsic cellular factors and their roles in pattern formation by neural crest cells	OPR	\$ 44,802	MRC	
Murphy, R A	Nerve growth factor:analysis in iris	OPR	\$ 80,000	AHFMR	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Operating	6	\$ 498,455	AHFMR	3	\$ 406,598
			MRC	2	\$ 87,537
			NSERC	1	\$ 4,320
			Total	6	\$ 498,455

Department of Applied Sciences in Medicine

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Hangartner, T N	Co-investigator with Weir, B (Surgery and Clinical Surgery): Studies on the prevention of chronic . . .				
	Co-investigator with Overton, T R: Treatment of osteoporosis with . . .				
Overton, T R	Skeletal status study in an elderly population	OPR	\$ 150,000	DBC	
	Dental, dietary and nutritional survey of a group of elderly people in Edmonton	OPR	\$ 17,550	KSC	
	Co-investigator with Weir, B (Surgery and Clinical Surgery): Studies on the prevention of chronic . . .				
	Treatment of osteoporosis with sodium fluoride and calcium alone - a comparative study. Funded previously under the title 'A clinical trial of skeletal activation in healthy postmenopausal women'	OPR	\$ 52,867	MRC	
Snyder, R E	Co-investigator with Allen, P S (Group NMR): In vivo applications of NMR spectroscopy . . .				
	The study of axonal transport using a multiple proportional counter	OPR	\$ 39,909	MRC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Operating	4	\$ 260,326	MRC	2	\$ 92,776
			Other Agencies	2	\$ 167,550
			Total	4	\$ 260,326

Department of Biochemistry

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Anderson, W F	Co-investigator with Kay, C M: Group in protein structure and . . .			
Bleackley, R C	Molecular analysis of human cytotoxic T cell function	OPR	\$ 30,000	MRC
	Co-investigator with Paetkau, V H: Structure and expression of genome . . .			
	T lymphocyte activation - A molecular study	OPR	\$ 86,334	NCI
	Cloning of lymphocyte toxin genes	CTR	\$ 110,500	SERAG
Bridger, W A	Hitachi U3200 UV/VIS spectrophotometer plus electronic temperature control unit	EQP	\$ 28,500	AHFMR
	Enzyme structure and assembly	OPR	\$ 111,100	MRC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Brox, L W				
	Co-investigator with Henderson, J F (J S McEachern Laboratory): Strategies for improving combination . . .			
	Co-investigator with Henderson, J F (J S McEachern Laboratory): Effects of guanine nucleotides . . .			
Cass, C E				
	Co-investigator with Brox, L W (J S McEachern Laboratory): Operation of flow cytometry laboratory . . .			
	Co-investigator with Paterson, A R P (J S McEachern Laboratory): Transport of nucleosides . . .			
Henderson, J F				
	Co-investigator with Brox, L W (J S McEachern Laboratory): Operation of flow cytometry laboratory . . .			
Hodges, R S				
	Hewlett Packard HP 1090 HPLC machine with accessories	EQP \$	67,551	AHFMR
	LKB 4170 Biolynx peptide synthesizer with computer control	EQP \$	139,300	AHFMR
	Regulation of cardiac muscle contraction	OPR \$	35,360	CHF
	Maintenance and equipment grant for Alberta Peptide Institute	OPR \$	57,000	MRC
	Co-investigator with Kay, C M: Group in protein structure and . . .			
James, M N G				
	To generate information relevant to the design of inhibitors of human renin	CTR \$	267,337	CALBI
	Refinement of the crystal structure of porcine pepsin	CTR \$	9,750	CANG
	Research	OPR \$	15,840	MILES
	Co-investigator with Kay, C M: Group in protein structure and . . .			
Kaplan, J G				
	Biochemical and cytochemical analysis of nuclear activation in stimulated lymphocytes	OPR \$	72,498	MRC
	Mechanism of the proliferative activation of lymphocytes	OPR \$	53,472	NSERC
Kay, C M				
	Physico-chemical, chemical and biological studies on cardiac troponin C and troponin T	OPR \$	31,200	CHF
	Group in protein structure and function	OPR \$	1,554,112	MRC
Madsen, N B				
	Automated chromatography system I A from Pharmacia, consisting of their System I minus the fraction collector (Frac 100)	EQP \$	14,834	AHFMR
	Structure-function relationships and regulation of enzymes associated with glycogen metabolism	OPR \$	151,500	MRC
McElhaney, R N				
	Co-investigator with Poznansky, M J (Physiology): Electron paramagnetic resonance . . .			
	The roles of lipids in biomembrane structure and function	OPR \$	109,201	MRC
McFadden, G				
	Replication and resolution of cloned poxivirus telomeres	OPR \$	49,490	MRC
	Shope fibroma virus	OPR \$	101,942	NCI
Morgan, A R				
	DNA replication, recombination, repair	OPR \$	62,115	MRC
Paetkau, V H				
	Structure and expression of genome DNA	OPR \$	80,800	MRC
	Modulators of lymphocyte function	OPR \$	92,852	NCI
Paranchych, W				
	Beckman model L8-70M preparative ultracentrifuge and type VTi80 rotor	EQP \$	45,495	AHFMR
	Characterization of conserved and variable peptide domains on the surface of pseudomonas pili: Potential for therapeutic strategies in patients with cystic fibrosis	OPR \$	20,948	CCFF
	Biosynthesis, assembly, structure and function of bacterial pili	OPR \$	128,723	MRC
Paterson, M C				
	Molecular cloning of human DNA repair genes	OPR \$	75,000	MRC
Reithmeier, R A				
	Structure and function of the anion transport protein of human erythrocyte membranes	OPR \$	12,750	MRC
Schneider, W J				
	Hormonal control of VLDL metabolism	OPR \$	41,600	CHF
	Receptor-mediated endocytosis in oocytes	OPR \$	59,618	MRC
Scraba, D G				
	Service contract for Philips EM 420-STEM electron microscope	OPR \$	11,100	MRC
	(1) Studies of mammalian viruses (2) Biological electron microscopy	OPR \$	77,770	MRC
Smillie, L B				
	Amino acid analyzer facility	EQP \$	127,699	AHFMR
	Co-investigator with Kay, C M: Group in protein structure and . . .			

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Sykes, B D					
Co-investigator with Kay, C M: Group in protein structure and . . .					
Scientific support in recognition of collaborative relationship between the Department of Cell and Molecular Pharmacology and Experimental Therapeutics at the Medical University of South Carolina and the NMR Facility at the University of Alberta		OPR	\$ 16,000	MUSC	
Supercomputers Access, awarded 10 hours		OPR		NSERC	
Vance, D E					
Co-investigator with Poznansky, M J (Physiology): Electron paramagnetic resonance . . .					
Weiner, J H					
Membrane transport and regulation, to be held in Banff, Alberta, May 2-6/87		CFC	\$ 15,000	AHFMR	
Co-investigator with Poznansky, M J (Physiology): Electron paramagnetic resonance . . .					
An investigation of membrane transport processes		OPR	\$ 88,173	MRC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Conferences	1	\$ 15,000	AHFMR	7	\$ 438,379
Contracts	3	\$ 387,587	MRC	17	\$ 2,730,950
Equipment	6	\$ 423,379	NSERC	1	\$ 53,472
Operating	27	\$ 3,226,498	Other Agencies	12	\$ 829,663
Total	37	\$ 4,052,464	Total	37	\$ 4,052,464

Cross Cancer Institute

The Cross Cancer Institute is an independent organization and has a formal affiliation with the Faculty of Medicine. The Alberta Cancer Board administers research funds for the Cross Cancer Institute directly. All principal investigators at the Cross Cancer Institute also hold academic appointments with the University of Alberta. Operating awards administered directly by the Institute include:

ACB \$2,005,790; NCI \$427,016; AHMFR \$550,425; MRC \$90,150; private contracts and other institutions \$1,484,688; **total \$4,558,069.**

This total is not included in the University of Alberta total given at the beginning of this document. Research support is reported within the University's departments when awards are administered by the University.

Group Lipid and Lipoprotein

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Brindley, D N					
	Control of glycerolipid & lipoprotein metabolism	OPR	\$ 376,000	AHFMR	
Vance, D E					
	Lipid-Lipoprotein Group- Phospholipid and lipoprotein metabolism	OPR	\$ 160,000	AHFMR	
	Regulation of phosphatidylcholine biosynthesis	OPR	\$ 144,228	MRC	
Vance, J E					
	The role of phospholipids in lipoproteins	OPR	\$ 47,000	CHF	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Operating	4	\$ 727,228	AHFMR	2	\$ 536,000
			MRC	1	\$ 144,228
			Other Agencies	1	\$ 47,000
			Total	4	\$ 727,228

Group NMR

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Allen, P S					
	In vivo applications of NMR spectroscopy to metabolism in tumour and peritumour tissue	OPR \$	43,000	ACB	
	In vivo applications of NMR spectroscopy and imaging to medicine	OPR \$	239,500	ACB	
	Co-investigator with Man, S F P (Medicine and Clinical Medicine): NMR in study of alveolar fluid . . .				
	Co-investigator with Weir, B (Surgery and Clinical Surgery): Studies on the prevention of chronic . . .				
	In vivo applications of nuclear magnetic resonance to medicine	OPR \$	71,224	MRC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Operating	3	\$ 353,724	MRC	1	\$ 71,224
			Other Provincial	2	\$ 282,500
			Total	3	\$ 353,724

Department of Health Services Administration and Community Medicine

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Bay, K S	Co-investigator with Kerr, J C (Nursing): Assessment of quality of nursing . . .				
Guidotti, T L	Symposium on immunotoxicology	CFC	\$ 14,900	ACOH	
	Illness experience of firefighters	OPR	\$ 47,700	ACOH	
	Pesticide poisoning manual	CTR	\$ 15,000	AE	
Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	1	\$ 14,900	Other Provincial	3	\$ 77,600
Contracts	1	\$ 15,000			
Operating	1	\$ 47,700			
Total	3	\$ 77,600			

Department of Immunology

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Diener, E	Syngeneic model to test the efficacy of immunotoxin-mediated purging of lymphoma cells from lymphoma-bone marrow cell mixtures	CTR	\$ 75,140	BIOM
	Use of target cell-specific drug-immunoconjugates in immunotherapy of cancer and autoimmune disease	OPR	\$ 81,750	MRC
	MRC Group on Immunoregulation	OPR	\$ 156,563	MRC
	Analysis of the homeostatic control of hematopoietic stem cells	OPR	\$ 65,000	SRC
Fotedar, A	Co-investigator with Green, D R: T-cell responses to collagen type . . .			
	T cell recognition	OPR	\$ 63,681	MRC
	Co-investigator with Wegmann, T G: Maternal immunoregulation and fetal . . .			
Green, D R	T-cell responses to collagen type II in mice	OPR	\$ 43,605	AS
	Immune response in intra-abdominal abscess formation and sepsis	OPR	\$ 40,000	CFIC
	Antigen-specific suppressor T cell molecules	OPR	\$ 57,763	MRC
	Inhibitory t-cell lymphokines in thermal trauma immunodeficiency	OPR	\$ 37,500	MRC
	T-Cell separation techniques	OPR	\$ 15,000	SCICA
Guilbert, L J	Co-investigator with Brox, L W (J S McEachern Laboratory): Operation of flow cytometry laboratory . . .			
	Regulation of macrophage production	OPR	\$ 70,560	NCI
Lee, K C	Functions of dendritic cells and macrophages in immune induction	OPR	\$ 63,122	NCI
	The specificity of tumor recognition by macrophages	OPR	\$ 51,750	NCI
Longenecker, B M	Molecular markers of malignancy and differentiation	OPR	\$ 51,000	MRC
	Mechanisms of organ specific metastasis, Terry Fox Special Initiatives Program	OPR	\$ 14,440	NCI
	Cancer metastasis: Adhesion receptors and T-cell immunity against carbohydrate cancer antigens	OPR	\$ 62,000	NCI
Pilarski, L M	Co-investigator with Brox, L W (J S McEachern Laboratory): Operation of flow cytometry laboratory . . .			
	Analysis of help in cytotoxic T Cell responses	OPR	\$ 88,575	MRC
	Analysis of immunodeficiency in multiple myeloma	OPR	\$ 64,995	NCI
Singh, B	Modulation of diabetes in non-obese diabetic (NOD) mice	OPR	\$ 43,000	CDA
	Molecular basis of peptide antigen recognition by T lymphocytes	OPR	\$ 30,000	MRC
	Characterization of functional sites on MHC antigens	OPR	\$ 68,558	MRC
	Co-investigator with Diener, E: MRC Group on Immunoregulation . . .			
Wegmann, T G	Antibody facilitation of bone marrow engraftment	OPR	\$ 72,750	MRC
	Maternal immunoregulation and fetal survival	OPR	\$ 63,750	MRC
	Co-investigator with Diener, E: MRC Group on Immunoregulation . . .			
	Maternal immune reactivity as a determinant of placental function and fetal survival	OPR	\$ 12,986	SEWF

Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	1	\$ 75,140	MRC	11	\$ 771,890
Operating	23	\$ 1,318,348	Other Agencies	13	\$ 621,598
Total	24	\$ 1,393,488	Total	24	\$ 1,393,488

J S McEachern Laboratory

Investigator	Project Title	Award	Amount	Agency
Brox, L W	Operation of flow cytometry laboratory	OPR	\$ 87,600	ACB
	Co-investigator with Paterson, A R P: Central research support services . . .			
Cass, C E	Co-investigator with Paterson, A R P: Central research support services . . .			
	Nucleoside transport systems in human cells: New strategies in chemotherapy of neoplastic disease	OPR	\$ 100,000	ACB
Craik, J D	Co-investigator with Cass, C E: Nucleoside transport systems in . . .			
Gati, W P	Co-investigator with Cass, C E: Nucleoside transport systems in . . .			
Henderson, J F	Co-investigator with Paterson, A R P: Central research support services . . .			
	Strategies for improving combination chemotherapy of human tumors	OPR	\$ 50,000	ACB
	Effects of guanine nucleotides on g-proteins in intact cells. Previously awarded under title	OPR	\$ 37,281	MRC
	Purine nucleoside and nucleotide metabolism			
Paterson, A R P	Central research support services in the McEachern Laboratory	OPR	\$ 50,000	ACB
	Co-investigator with Cass, C E: Nucleoside transport systems in . . .			
	Transport of nucleosides	OPR	\$ 89,627	MRC
	Studies in cancer chemotherapy	OPR	\$ 675,925	NCI

Type of Award	No.	Amount	Source of Funds	No.	Amount
Operating	7	\$ 1,090,433	MRC	2	\$ 126,908
			Other Provincial	4	\$ 287,600
			Other Agencies	1	\$ 675,925
			Total	7	\$ 1,090,433

Department of Medical Microbiology and Infectious Diseases

Investigator	Project Title	Award	Amount	Agency
Armstrong, G D	Biochemical characterization of intestinal epithelial cell receptors for human enterotoxigenic Escherichia coli	OPR	\$ 9,000	MRC
Fanning, A	Co-investigator with Tyrrell, D L: 1 Revco ULT 2186D -85 degree C, . . .			
Leung, W C	Factors influencing the production of bioproducts from recombinant filamentous fungi	OPR	\$ 72,000	NSERC
Marusyk, R G	VIth International Congress on Virology, to be held in Edmonton, Alberta, Aug 9-14/87	CFC	\$ 60,000	AHFMR
	Co-investigator with Tyrrell, D L: 1 Revco ULT 2186D -85 degree C, . . .			
	VIth International Congress on Virology, to be held in Edmonton, Alberta, Aug 9-14/87	CFC	\$ 5,000	HWC
	Immunity elicited by measles vaccination	OPR	\$ 31,720	MSI
Robertson, J A	Characterization of Ureaplasma urealyticum	OPR	\$ 50,944	MRC
Romanowski, B	Canadian collaborative study of human immunodeficiency virus infection among sexually active women	OPR	\$ 42,955	HWC

Investigator	Project Title	Award	Amount	Agency	
Salmi, A A					
	Immunopathogenesis of neurovirological diseases	OPR \$	80,000	AHFMR	
	(Reichert) histostat 975C cryostat	EQP \$	10,960	AHFMR	
	Co-investigator with Tyrrell, D L: 1 Revco ULT 2186D -85 degree C, . . .				
	(Baker) BioGard B40-112 vertical laminar flow biological safety cabinet	EQP \$	10,813	AHFMR	
	Co-investigator with Taylor, D E: Characterization of bacterial plasmids . . .				
	Co-investigator with Marusyk, R G: Immunity elicited by measles vaccination . . .				
	Virus infection and immunity in EAE	OPR \$	51,301	MSS	
Taylor, D E					
	Characterization of bacterial plasmids	EQP \$	15,340	AHFMR	
	Genetic and physical characterization of antibiotic resistance plasmids of the H incompatibility group	OPR \$	50,139	MRC	
Tyrrell, D L					
	1 Revco ULT 2186D -85 degree C, 20 foot cubic foot upright freezer, and filing system	EQP \$	11,844	AHFMR	
	Antiviral therapy for hepatitis B	TTR \$	75,000	AHFMR	
	Co-investigator with Taylor, D E: Characterization of bacterial plasmids . . .				
	Co-investigator with Salmi, A A: (Reichert) histostat 975C cryostat . . .				
	Paramyxoviruses: Assembly, persistence and autoimmunity	OPR \$	76,035	MRC	
	Neurovirological research	OPR \$	31,269	PENN	
Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	2	\$ 65,000	AHFMR	7	\$ 263,957
Equipment	4	\$ 48,957	MRC	4	\$ 186,118
Operating	10	\$ 495,363	NSERC	1	\$ 72,000
Technology Transfer	1	\$ 75,000	Other Federal	2	\$ 47,955
Total	17	\$ 684,320	Other Agencies	3	\$ 114,290
			Total	17	\$ 684,320

Department of Medicine and Clinical Medicine

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Bretscher, P A				
Antigen-specific regulation and modulation of the immune response. Previous title: Paralysis and induction of lymphocytes		OPR \$	63,050	MRC
Castor, W R				
Co-investigator with Caelli, T M (Science, Psychology): Computer assisted mammography . . .				
Clandinin, M T				
Phospholipid turnover and membrane synthesis in the intestinal mucosa: Implications for regulation of lipid absorption in normal and disease states		OPR \$	38,889	MRC
Dasgupta, M K				
Co-investigator with Dossetor, J B: Cooperative research and development . . .				
Davies, P				
A study of factors leading to abnormalities in neutrophil function and numbers in patients with rheumatoid arthritis and Felty's Syndrome		OPR \$	17,575	MSI
Dossetor, J B				
Cooperative research and development grant - Development of urine collection and peritoneal dialysis system that resist bacterial colonization and reduce catheter-associated infections		OPR \$	14,000	NSERC
Fedorak, R N				
Adaptation & regulation of intestinal glucose transport		OPR \$	42,000	AHFMR
Field, C J				
Co-investigator with Clandinin, M T (Home Economics, Foods and Nutrition): Modulation of adipocyte insulin . . .				
Finegood, D T				
Hepatic insulin action and insulin resistance		OPR \$	48,000	AHFMR
Ginsberg, J				
Protein kinase C activation in the thyroid and its relationship to autoimmune thyroid disease		OPR \$	40,740	MRC
Grace, M G				
Co-investigator with Hodges, R S (Biochemistry): Hewlett Packard HP 1090 HPLC machine . . .				
Co-investigator with Overton, T R (Applied Sciences in Medicine): Treatment of osteoporosis with . . .				

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Halloran, P F	A program in clinical molecular immunology	OPR \$	285,000	AHFMR
	Funding towards the cost of relocating Dr. Halloran's laboratory equipment and personnel	INF \$	12,000	AHFMR
	Alloantigens and alloimmune responses of the mouse	OPR \$	70,000	MRC
Harley, C H	Co-investigator with Overton, T R (Applied Sciences in Medicine): Treatment of osteoporosis with . . .			
Hulbert, W C	LKB historange microtome	EQP \$	24,570	AHFMR
	The control of cellular exfoliation and reforming of barrier properties	OPR \$	24,000	ALA
	The BG Dog: A model with acute and chronic airway hyperreactivity	OPR \$	22,192	USNIH
Humen, D P	Antimyocardial antibody in catheter shock	OPR \$	10,650	CHF
Jimbow, K	Laboratory diagnosis & rational therapy of melanoma	OPR \$	379,532	AHFMR
Jugdutt, B I	Modification of ventricular geometry and function after myocardial infarction	OPR \$	18,720	CHF
	Ischemic heart disease: Preservation of ischemic myocardium/healing after myocardial infarction	OPR \$	53,808	MRC
Kappagoda, C T	Physiological effects of stimulating rapidly adapting receptors	OPR \$	14,750	ALA
	Cardiovascular reflexes and pulmonary blood flow - previously entitled function of atrial receptors	OPR \$	38,706	MRC
	Co-investigator with Mant, M J: Platelet activation/reactivity . . .			
Kaufman, S	Physiology of release and actions of ANP	OPR \$	47,500	CHF
	Mechanisms by which atrial stretch contributes to fluid and electrolyte homeostasis	OPR \$	45,066	MRC
King, E G	Research on ageing	OPR \$	2,175	ASSCH
	Research on ageing, problem behavior	OPR \$	2,550	ASSCH
King, M	Mucus clearance by airflow interaction	OPR \$	36,700	CCFF
	Studies on respiratory tract mucus	OPR \$	43,597	MRC
Leung, W C	Protein engineering of human interferon gamma	OPR \$	54,825	NCI
Lien, D C	Neutrophils in airway inflammation	OPR \$	96,896	AHFMR
	Neutrophil kinetics in the airway microvasculature	OPR \$	20,525	ALA
MacLean, G	Radioimmunosciintigraphy using novel monoclonal antibodies (in collaboration with the Alberta Cancer Board - \$250,450)	OPR		BIOM
	Radioimmunosciintigraphy using novel monoclonal antibodies (in collaboration with the Alberta Cancer Board - \$65,000)	OPR		MRC
Mahachai, V	Factors influencing intestinal & hepatic first-pass metabolism of drugs	OPR \$	62,500	AHFMR
Man, G C W	Studies on sulphur dioxide induced tracheal constriction	OPR \$	17,400	MRC
	Studies on reflex changes in bronchomotor tone during high frequency oscillation	OPR \$	7,250	MRC
Man, S F P	Discretionary research fund - to be used in research development	OPR \$	5,000	ALA
	NMR in study of alveolar fluid clearance	OPR \$	41,500	CHF
	Co-investigator with Noujaim, A A (Pharmacy and Pharmaceutical Sciences): Aliphatic amines as potential radiopharmaceuticals . . .			
	Non-ventilatory lung function in inhalational injury	OPR \$	47,066	MRC
Mant, M J	Platelet activation/reactivity in cardiovascular disease	OPR \$	43,479	MRC
Moreau, M J	Experimental evaluation of spinal fixation devices	OPR \$	6,000	MRC
Morrish, D W	Regulation of placental growth, differentiation and peptide hormone secretion	OPR \$	44,440	MRC
Pazderka, F	Co-investigator with Brox, L W (J S McEachern Laboratory): Operation of flow cytometry laboratory . . .			
Preiksaitis, J K	EBV infection and lymphoproliferation in renal allograft recipients	OPR \$	30,000	KFC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Russell, A S	Co-investigator with Jamali, F (Pharmacy and Pharmaceutical Sciences): Stereoselective pharmacokinetics . . .			
Ryan, E A	Insulin action in gestational diabetes	OPR	\$ 17,456	MSI
Shaw, A R E	Structural and functional characterisation of a signal-generating cell surface glycoprotein	OPR	\$ 30,000	MRC
Thomson, A B R	Co-investigator with Poznansky, M J (Physiology): Electron paramagnetic resonance . . .			
	Intestinal membrane transport in Diabetes mellitus	OPR	\$ 42,000	CDA
	Critical period programming	OPR	\$ 40,000	CFIC
	Intestinal absorption in health and disease	OPR	\$ 77,265	MRC
Trayhurn, P	Regulation of energy balance	OPR	\$ 72,500	AHFMR
Turner, A R	Co-investigator with Brox, L W (J S McEachern Laboratory): Operation of flow cytometry laboratory . . .			
Witkowski, F X	Autonomic neural influences in arrhythmogenesis	OPR	\$ 52,000	CHF
Wong, D	Leukotriene B4 receptors in lung and neutrophils	OPR	\$ 9,200	ALA
Wong, K	Investigations into the activity and distribution of adenylate cyclase and binding kinetics of platelet activating factor in human neutrophils	OPR	\$ 45,376	MRC

<i>Type of Award</i>	<i>No.</i>	<i>Amount</i>	<i>Source of Funds</i>	<i>No.</i>	<i>Amount</i>
Equipment	1	\$ 24,570	AHFMR	9	\$ 1,022,998
Infrastructure	1	\$ 12,000	MRC	17	\$ 712,132
Operating	45	\$ 2,221,878	NSERC	1	\$ 14,000
Total	47	\$ 2,258,448	Other Provincial	2	\$ 4,725
			Other Agencies	18	\$ 504,593
			Total	47	\$ 2,258,448

Department of Obstetrics and Gynaecology

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Mitchell, B F	Hormonal functions of human fetal membranes	OPR	\$ 39,188	MRC
Morcos, F	A Post Olympic Conference in Obstetrics and Gynaecology - Reflection on the 80's, February 29-March 4, 1988, Edmonton, Alberta	CFC	\$ 10,000	AHFMR

<i>Type of Award</i>	<i>No.</i>	<i>Amount</i>	<i>Source of Funds</i>	<i>No.</i>	<i>Amount</i>
Conferences	1	\$ 10,000	AHFMR	1	\$ 10,000
Operating	1	\$ 39,188	MRC	1	\$ 39,188
Total	2	\$ 49,188	Total	2	\$ 49,188

Department of Paediatrics

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Chan, G Y	Co-investigator with Schiff, D: Mechanism of bilirubin toxicity . . .			
Coe, J Y	Pharmacological manipulation of the neonatal circulation	OPR	\$ 75,000	AHFMR
Godel, J C	Co-investigator with Hodges, R S (Biochemistry): Hewlett Packard HP 1090 HPLC machine . . .			
	Northern infant nutrition study	OPR	\$ 131,223	HWC
Grace, M G	Co-investigator with Godel, J C: Northern infant nutrition study . . .			
Jaworski, M A	Tissue-specific and generalized autoimmunity in the BB rat and in human insulin-dependent diabetes mellitus (IDDM)	OPR	\$ 39,950	MRC
	Molecular genetics of insulin dependent diabetes mellitus	OPR	\$ 69,334	MSI

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Lee, K	Co-investigator with Tam, Y K (Pharmacy and Pharmaceutical Sciences): Estimation of serum theophylline . . .			
Lopaschuk, G D	Fatty acid metabolism during ischemia in the diabetic rat heart	OPR	\$ 46,177	JDF
	Coenzyme A metabolism in the heart	OPR	\$ 25,800	MRC
Lord, C	Cognitive and psycholinguistic communication deficits in autism	OPR	\$ 19,000	NSERC
	Social development and deficits in autism	OPR	\$ 37,509	SSHRC
	Sex differences in Autism	OPR	\$ 22,409	UOL
Michalak, M	Ca transport in mature and developing rats	OPR	\$ 252,100	AHFMR
Olley, P M	Eicosanoids and the perinatal circulation	OPR	\$ 361,458	AHFMR
Pabst, H F	Co-investigator with Hodges, R S (Biochemistry): Hewlett Packard HP 1090 HPLC machine . . .			
	Co-investigator with Godel, J C: Northern infant nutrition study . . .			
Schiff, D	Co-investigator with Poznansky, M J (Physiology): Electron paramagnetic resonance . . .			
	Mechanism of bilirubin toxicity in cultured neural cells	OPR	\$ 29,240	MRC
Spady, D W	Body composition of premature infants	OPR	\$ 36,125	MRC
Van Aerde, J	Fat utilization in parenterally fed newborn infants measured with indirect calorimetry & with tracer kinetics of 13	OPR	\$ 42,000	AHFMR
Wenman, W M	Research studies relating to the development of immunoprophylactic agents against Chlamydia infections in human beings using molecular approaches	CTR	\$ 140,000	MERIC
	Pathogenesis of human chlamydial infections	OPR	\$ 57,069	MRC

Type of Award	<i>No.</i>	<i>Amount</i>
Contracts	1	\$ 140,000
Operating	15	\$ 1,244,394
Total	16	\$ 1,384,394

Source of Funds	<i>No.</i>	<i>Amount</i>
AHFMR	4	\$ 730,558
MRC	5	\$ 188,184
NSERC	1	\$ 19,000
SSHRC	1	\$ 37,509
Other Federal	1	\$ 131,223
Other Agencies	4	\$ 277,920
Total	16	\$ 1,384,394

Department of Pathology

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Lin, C C	Chromosome structure and function in man and other eukaryotic species-transfer from University of Calgary	OPR	\$ 70,700	MRC
McGann, L E	Co-investigator with Brox, L W (J S McEachern Laboratory): Operation of flow cytometry laboratory . . .			
	Cryoprotection in cells and tissues. Previously awarded under the name - The plasma membrane: Target for freezing injury?	OPR	\$ 52,981	MRC
Solez, K	Pathology and pathophysiology of acute renal failure	OPR	\$ 144,000	AHFMR
Stinson, R A	Studies of human alkaline phosphatase	OPR	\$ 53,884	MRC

Type of Award	<i>No.</i>	<i>Amount</i>
Operating	4	\$ 321,565

Source of Funds	<i>No.</i>	<i>Amount</i>
AHFMR	1	\$ 144,000
MRC	3	\$ 177,565
Total	4	\$ 321,565

Department of Pharmacology

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>		
Allen, T M						
	Co-investigator with Poznansky, M J (Physiology): Electron paramagnetic resonance . . .					
	Co-investigator with Cook, D A: Model J2-21M/E floor model centrifuge, . . .					
	Prolongation of plasma half-life of liposomes	CTR	\$ 41,250	LTi		
	Membrane fusion in model membrane systems	OPR	\$ 9,750	MRC		
	Drug carriers and the mononuclear phagocyte system	OPR	\$ 79,214	MRC		
	Marine natural products with antineoplastic activities	OPR	\$ 51,891	NCI		
Clanachan, A S						
	Co-investigator with Cook, D A: Model J2-21M/E floor model centrifuge, . . .					
	Drug interactions with nucleoside transport systems	OPR	\$ 48,000	CHF		
Cook, D A						
	Model J2-21M/E floor model centrifuge, JA-20 rotor, and JA-14 rotor	EQP	\$ 24,155	AHFMR		
	Blood vessel reactivity and cerebrovascular spasm	OPR	\$ 52,000	CHF		
	Drug receptors and biomembranes - histamine receptors	OPR	\$ 36,036	MRC		
	Co-investigator with Weir, B (Surgery and Clinical Surgery): Studies on the prevention of chronic . . .					
Dryden, W F						
	Co-investigator with Smith, P A: Modulation of ganglionic transmission . . .					
Frank, G B						
	Studies on contraction of skeletal muscle	OPR	\$ 46,783	MRC		
	An investigation of the properties of opiate drug receptors located on excitable cell membranes	OPR	\$ 34,349	MRC		
Gordon, T						
	Co-investigator with Cook, D A: Model J2-21M/E floor model centrifuge, . . .					
	Co-investigator with Smith, P A: Modulation of ganglionic transmission . . .					
	Trophic interactions in the peripheral nervous system	OPR	\$ 28,130	MRC		
Reiffenstein, R J						
	Neurological action of sulfide	OPR	\$ 97,600	ACOH		
	Role of cholinergic input in hippocampal functioning	OPR	\$ 10,875	MRC		
Smith, P A						
	Modulation of ganglionic transmission	EQP	\$ 33,348	AHFMR		
	Modulation of synaptic transmission in sympathetic ganglia and spinal cord	OPR	\$ 37,572	MRC		
Type of Award		No.	Amount	Source of Funds	No.	Amount
Contracts		1	\$ 41,250	AHFMR	2	\$ 57,503
Equipment		2	\$ 57,503	MRC	8	\$ 282,709
Operating		12	\$ 532,200	Other Provincial	1	\$ 97,600
Total		15	\$ 630,953	Other Agencies	4	\$ 193,141
				Total	15	\$ 630,953

Department of Physiology

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Benishin, C G				
	Presynaptic modulation of potassium channels	OPR	\$ 136,090	AHFMR
Bourne, G A				
	Delineation of the roles of the calcium and cyclic nucleotide messenger systems in mediating the biphasic release of gonadotropins	OPR	\$ 38,380	MRC
Cheeseman, C I				
	Diabetes and intestinal glucose absorption	OPR	\$ 35,000	CDA
	Co-investigator with Thomson, A B R (Medicine and Clinical Medicine): Intestinal membrane transport in . . .			
	Co-investigator with Thomson, A B R (Medicine and Clinical Medicine): Critical period programming . . .			
	Control of intestinal transport	OPR	\$ 33,656	MRC
French, A S				
	Computing equipment for processing single channel patch-clamp data	EQP	\$ 24,622	AHFMR
	Sensory transduction in mechanoreceptors and photoreceptors	OPR	\$ 45,576	MRC
Harvey, S				
	Prolactin releasing factors	OPR	\$ 178,740	AHFMR
	Negative feedback regulation of growth hormone secretion in birds	OPR	\$ 40,000	NSERC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Hutchison, K J	Hemodynamics and atherosclerosis	OPR \$	42,640	CHF
	Co-investigator with Weir, B (Surgery and Clinical Surgery): Purchase of xenon perfusion system . . .			
Pang, P K	Vascular action of parathyroid hormone in lower vertebrates	OPR \$	40,000	NSERC
	Research and development of natural calcium antagonists as therapeutic agents	TTR \$	220,000	NSERC
	Herbal medicine program	CTR \$	200,000	TAIHO
Pearson, K G	Morphological and electrophysiological studies on identified neurons	OPR \$	55,601	MRC
Poznansky, M J	International symposium on Lipoprotein Metabolism, to be held at Banff, Alberta, May 7-10/87	CFC \$	16,000	AHFMR
	Electron paramagnetic resonance spectrometer Bruker ER 200D-SRC-9/2.7 plus variable temperature accessory	EQP \$	224,175	AHFMR
	SOD-Albumin conjugates	CTR \$	21,000	DEBIO
	Soluble enzyme albumin polymers: New approaches to enzyme therapy	OPR \$	83,477	MRC
Prochazka, A	Neural control of mammalian movement	OPR \$	60,000	AHFMR
	Co-investigator with Stein, R B: Instrumentation for developing . . .			
Sanders, E J	Maintenance grant for Philips 300 electron microscope	OPR \$	8,064	MRC
	Physiological and morphological aspects of cellular interactions in early development	OPR \$	40,227	MRC
Stein, R B	Instrumentation for developing biotelemetry and prosthetics	EQP \$	36,204	AHFMR
	Kinetics of contraction in intact muscle fibres	OPR \$	46,000	MDA
	Neurophysiological studies on the control of movement	OPR \$	71,934	MRC

<i>Type of Award</i>	<i>No.</i>	<i>Amount</i>	<i>Source of Funds</i>	<i>No.</i>	<i>Amount</i>
Conferences	1	\$ 16,000	AHFMR	7	\$ 675,831
Contracts	2	\$ 221,000	MRC	8	\$ 376,915
Equipment	3	\$ 285,001	NSERC	3	\$ 300,000
Operating	16	\$ 955,385	Other Agencies	5	\$ 344,640
Technology Transfer	1	\$ 220,000	Total	23	\$ 1,697,386
Total	23	\$ 1,697,386			

Department of Psychiatry

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Baker, G B	Hewlett Packard robotic arm automatic sampler (injector) for gas chromatograph, interface kit, and warranty extension to one year	EQP \$	11,263	AHFMR
	Establishment of an Alberta Mental Health Advisory Council Research Unit to study the neurochemical bases of psychiatric disorders	OPR \$	250,000	AMHAC
Bland, R C	Family study of mental disorders	OPR \$	61,488	AMHAC
Bornstein, R A	Co-investigator with Baker, G B: Establishment of an Alberta Mental . . .			
Dewhurst, W G	Co-investigator with Baker, G B: Hewlett Packard robotic arm automatic . . .			
Douglass, A B	Co-investigator with Baker, G B: Establishment of an Alberta Mental . . .			
Greenshaw, A J	Hewlett Packard high performance liquid chromatograph 1090L plus options	EQP \$	35,460	AHFMR
	Co-investigator with Baker, G B: Hewlett Packard robotic arm automatic . . .			
	Chronic effects of B-pheylethylamine, tryptamine and antidepressants on brain amine receptors	OPR \$	40,308	AMHAC
	Co-investigator with Baker, G B: Establishment of an Alberta Mental . . .			
Joyce, A S	Co-investigator with Piper, W E: Preconditions and response to psychodynamic . . .			
Newman, S C	Co-investigator with Bland, R C: Family study of mental disorders . . .			

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Piper, W E					
	Preconditions and response to psychodynamic interpretations in short-term individual psychotherapy	OPR \$	38,474	AMHAC	
	A controlled study of effectiveness and patient suitability for short-term group psychotherapy	OPR \$	34,000	CPRF	
	A controlled study of patient suitability and outcome in short-term, individual psychotherapy	OPR \$	37,354	HWC	
Type of Award	No.	Amount	Source of Funds	No.	Amount
Equipment	2	\$ 46,723	AHFMR	2	\$ 46,723
Operating	6	\$ 461,624	Other Provincial	4	\$ 390,270
Total	8	\$ 508,347	Other Federal	1	\$ 37,354
			Other Agencies	1	\$ 34,000
			Total	8	\$ 508,347

Department of Radiology and Diagnostic Imaging

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
McEwan, A J B				
	Co-investigator with MacLean, G (Medicine and Clinical Medicine): Radioimmunosciintigraphy using novel . . .			
Miller, J D R				
	Co-investigator with Allen, P S (Group NMR): In vivo applications of NMR spectroscopy . . .			
	Co-investigator with Weir, B (Surgery and Clinical Surgery): Purchase of xenon perfusion system . . .			
Russell, D B				
	Co-investigator with Weir, B (Surgery and Clinical Surgery): Purchase of xenon perfusion system . . .			

Department of Surgery and Clinical Surgery

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Boisvert, D P J				
	Co-investigator with Allen, P S (Group NMR): In vivo applications of NMR spectroscopy . . .			
Bowes, K L				
	G I motility studies	OPR \$	55,849	MRC
Gana, T J				
	Co-investigator with Koo, J: To measure regional gastric mucosal . . .			
Hamilton, S M				
	Lymphatic propulsion in hemorrhagic shock	OPR \$	8,062	CFAGS
Kneteman, N M				
	Islet isolation, immunodulation & immunosuppression	OPR \$	101,772	AHFMR
Koo, J				
	Measurement of gastrointestinal mucosal blood flow	OPR \$	9,880	CFAGS
	To measure regional gastric mucosal blood flow during gastroscopy using Laser-doppler flowmetry and hydrogen gas clearance	OPR \$	18,000	MSI
	Measurement of regional gastric mucosal blood flow during endoscopy using Laser-doppler flowmetry and hydrogen gas clearance	OPR \$	30,000	SEARL
McKean, J D S				
	Co-investigator with Allen, P S (Group NMR): In vivo applications of NMR spectroscopy . . .			
Rajotte, R V				
	Society for Cryobiology, 24th Annual Meeting, to be held in Edmonton, Alberta, Jun 22-26/87	CFC \$	5,000	AHFMR
	Co-investigator with Thomson, A B R (Medicine and Clinical Medicine): Intestinal membrane transport in . . .			
	Cryopreservation of pancreatic islet tissue for transplantation	OPR \$	49,490	MRC
	Co-investigator with Clandinin, M T (Home Economics, Foods and Nutrition): Demonstration of the in vivo significance . . .			
Reid, D C				
	Co-investigator with Baracos, V E (Agriculture and Forestry, Animal Science): Effects of trauma and athletic . . .			
Russell, J C				
	Ischemic heart disease in a rat model	OPR \$	31,200	CHF
	Treatment of the insulin resistant atherosclerosis-prone LA/N rat with acarbose	OPR \$	9,000	MILES
Smith, R S				
	Mechanisms of axonal transport	OPR \$	32,007	MRC
Soenen, G M				
	Co-investigator with Koo, J: To measure regional gastric mucosal . . .			

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Stockbridge, N L					
Co-investigator with Weir, B: Vascular smooth muscle electrical . . .					
Role of calcium in transmitter release	OPR	\$	11,267	MRC	
Warnock, G L					
Isolation and immunomodulation of human islets	OPR	\$	37,071	MSI	
Weir, B					
Vascular smooth muscle electrical activity in vasospasm	OPR	\$	10,000	CHF	
Surgical research	OPR	\$	60,000	ECECA	
Studies on the prevention of chronic cerebral vasospasm and delayed ischemia following subarachnoid hemorrhage in primates	OPR	\$	49,466	MRC	
Purchase of xenon perfusion system	EQP	\$	63,500	MSI	
Study on the effect of U-74006F (experimental drug) on neurological recovery	CTR	\$	65,100	UPJ	
Randomized study of nicardipine in subarachnoid hemorrhage (awarded \$1,000 per patient)	CTR			UVA	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Conferences	1	\$ 5,000	AHFMR	2	\$ 106,772
Contracts	1	\$ 65,100	MRC	5	\$ 198,079
Equipment	1	\$ 63,500	Other Agencies	11	\$ 341,813
Operating	15	\$ 513,064	Total	18	\$ 646,664
Total	18	\$ 646,664			

Faculty of Nursing

Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Conferences	1	\$ 3,180	AHFMR	1	\$ 30,016
Equipment	1	\$ 30,016	Other Provincial	6	\$ 33,744
Operating	10	\$ 39,870	Other Federal	1	\$ 3,000
Total	12	\$ 73,066	Other Agencies	4	\$ 6,306
			Total	12	\$ 73,066

Faculty of Nursing

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Allen, M				
Development of a research proposal to study the informational needs of persons with Iritis	OPR	\$	2,500	AFNR
The role of perceived uncertainty in coping with chronic illness	OPR	\$	2,500	AFNR
Co-investigator with Morse, J M: Microcomputers, software and accessories, . . .				
Bell, L M				
Co-investigator with Field, P A: Nurses perceptions of their role . . .				
Bergum, V				
Co-investigator with Ross, J D: The ethnography of childhood: 2nd . . .				
Davies, E M				
Family responses to supportive care: Phase 1	OPR	\$	20,564	AFNR
Field, P A				
An exploration of the attachment of mothers to pre-term infants - M N Candidate - Brady-Fryer B	OPR	\$	2,706	AARN
Nurses perceptions of their role and functions in the ER setting: A descriptive study - M N Candidate Bell L M	OPR	\$	350	AARN
Kerr, J C				
Assessment of quality of nursing care - the psychosocial domain - Student - Forrest, D	OPR	\$	2,500	AFNR
Co-investigator with Yonge, O: Preceptorship in nursing education . . .				
Morse, J M				
The cultural context of infant feeding among the Cree - M N Candidate - Neander W	OPR	\$	2,420	AARN
Adolescent health: An emic perspective - M N Candidate - Telford L A	OPR	\$	830	AARN
Microcomputers, software and accessories, video equipment and other, and interviewing equipment	EQP	\$	30,016	AHFMR
National Health Research Scholar award	OPR	\$	3,000	HWC
Payne, L A				
Co-investigator with Allen, M: The role of perceived uncertainty . . .				

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Ross, J D				
	The ethnography of childhood: 2nd International Workshop, July 6-8/87, Camrose International Institute, Camrose, Alberta	CFC	\$ 3,180	AFNR
Yonge, O				
	Preceptorship in nursing education	OPR	\$ 2,500	AFNR

Faculty of Pharmacy and Pharmaceutical Sciences

Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Contracts	1	\$ 25,000	AHFMR	3	\$ 78,050
Equipment	2	\$ 38,050	MRC	11	\$ 404,649
Infrastructure	1	\$ 40,000	NSERC	2	\$ 49,000
Operating	14	\$ 468,649	Other Agencies	3	\$ 71,000
Technology Transfer	1	\$ 31,000	Total	19	\$ 602,699
Total	19	\$ 602,699			

Faculty of Pharmacy and Pharmaceutical Sciences

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Coutts, R T				
	Co-investigator with Baker, G B (Medicine, Psychiatry): Hewlett Packard robotic arm automatic . . .			
	Co-investigator with Baker, G B (Medicine, Psychiatry): Establishment of an Alberta Mental . . .			
	Co-investigator with Jamali, F: Stereoselective pharmacokinetics . . .			
	Co-investigator with Jordan, R B (Science, Chemistry): Mass spectrometry service laboratory . . .			
Danielson, T J				
	Co-investigator with Baker, G B (Medicine, Psychiatry): Establishment of an Alberta Mental . . .			
Dean				
	For Support of Medical Research using the SLOWPOKE Nuclear Reactor	INF	\$ 40,000	AHFMR
	General research grant to the Dean for the support of research in the Faculty of Pharmacy and Pharmaceutical Sciences	OPR	\$ 15,000	MRC
Jamali, F				
	Stereoselective pharmacokinetics of certain non-steroidal antiinflammatory drugs	OPR	\$ 38,380	MRC
Joshua, A V				
	Co-investigator with Scott, J R: Development of SPECT brain blood . . .			
Knaus, E E				
	IBM PC XT computer system, Med Associates analog to digital converter system, Grass model 7-16P-35 polygraph system	EQP	\$ 24,604	AHFMR
	Co-investigator with Wiebe, L I: CRC-30BC radioisotope dose calibrator . . .			
	The design and pharmacological evaluation of new nitrogen heterocycles	OPR	\$ 41,186	MRC
	Bruker AM-300 MHz nuclear magnetic resonance (NMR) operator salary and maintenance support	OPR	\$ 51,145	MRC
	The design and pharmacological evaluation of heterocyclic calcium channel antagonists and agonists	OPR	\$ 43,632	MRC
	Hewlett-Packard 5995A gas chromatograph-mass spectrometer (GC-MS), maintenance contract and technician- operator	OPR	\$ 20,000	MRC
	Co-investigator with Wiebe, L I: Radiohalogenated pyrimidine nucleosides . . .			
	Compound synthesis	CTR	\$ 25,000	ORTHO
Micetich, R G				
	Co-investigator with Baker, G B (Medicine, Psychiatry): Establishment of an Alberta Mental . . .			
Noujaim, A A				
	Co-investigator with Wiebe, L I: CRC-30BC radioisotope dose calibrator . . .			
	Co-investigator with MacLean, G (Medicine, Medicine and Clinical Medicine): Radioimmunoassay using novel . . .			
	Aliphatic amines as potential radiopharmaceuticals for the study of lung function	OPR	\$ 37,281	MRC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Pasutto, F M				
	Co-investigator with Jamali, F: Stereoselective pharmacokinetics . . .			
	Co-investigator with Jordan, R B (Science, Chemistry): Mass spectrometry service laboratory . . .			
Rogers, J A	Improved bioavailability of drugs formulation with phospholipids	OPR	\$ 33,942	MRC
Scott, J R	Development of SPECT brain blood flow radiodiagnostic agents	TTR	\$ 31,000	NSERC
Shysh, A J				
	Co-investigator with Wiebe, L I: CRC-30BC radioisotope dose calibrator . . .			
	Biological investigation of radiolabelled conjugated lectins	OPR	\$ 22,205	MRC
Tam, Y K				
	Pharmacokinetics of lidocaine during prolonged intravenous infusion	OPR	\$ 41,000	CHF
	Estimation of serum theophylline concentration in pediatrics using sustained release form	OPR	\$ 5,000	FISON
Wiebe, L I				
	CRC-30BC radioisotope dose calibrator	EQP	\$ 13,446	AHFMR
	In vivo metabolism of fluorinated nucleosides using whole-body NMR	OPR	\$ 54,934	MRC
	Co-investigator with Knaus, E E: Hewlett-Packard 5995A gas chromatograph-mass . . .			
	Radiohalogenated pyrimidine nucleosides for use in diagnostic oncology and virology	OPR	\$ 46,944	MRC
Wolowyk, M W				
	Co-investigator with Knaus, E E: IBM PC XT computer system, Med . . .			
	Co-investigator with Knaus, E E: The design and pharmacological . . .			
	Hagfish erythrocytes: Characteristics of membrane transport systems	OPR	\$ 18,000	NSERC

Faculty of Physical Education and Recreation

Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Conferences	2	\$ 5,500	NSERC	1	\$ 9,476
Contracts	1	\$ 13,989	Other Provincial	9	\$ 267,573
Operating	19	\$ 394,023	Other Federal	10	\$ 70,533
Total	22	\$ 413,512	Other Agencies	2	\$ 65,930
			Total	22	\$ 413,512

Department of Athletic Services

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Steadward, R D				
	A kinematic analysis of wheelchair propulsion	OPR	\$ 5,550	SPC
Operating		Other Federal	1	\$ 5,550

Department of Physical Education and Sport Studies

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Belcastro, A N				
	Etiology of muscle fatigue cellular perspectives	OPR	\$ 9,476	NSERC
Gervais, P				
	Co-investigator with Steadward, R D (Athletic Services): A kinematic analysis of wheelchair . . .			
Hall, A				
	Gender and decision making in national sport organizations	OPR	\$ 13,000	FAS
	The status of women in selected national sport organizations	OPR	\$ 13,000	FAS
	Field hockey study	OPR	\$ 3,000	FAS
	Field hockey study	OPR	\$ 2,000	FAS
Hinings, C R	Management of change in provincial sport and recreation organizations	OPR	\$ 14,984	ARP
Houston, S				
	Co-investigator with Quinney, H A: Alberta fitness leadership certification . . .			
	Co-investigator with Quinney, H A: University of Alberta Fitness Unit . . .			

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Mendryk, S W	Co-investigator with Baracos, V E (Agriculture and Forestry, Animal Science): Effects of trauma and athletic . . .			
Petersen, S R	Time-motion analysis of ice-hockey officials	OPR \$	2,605	IHCE
Quinney, H A	Alberta fitness leadership certification program	OPR \$	63,325	AFLCA
	University of Alberta Fitness Unit	OPR \$	22,500	ARP
	Fitness appraisal certification & accreditation program	OPR \$	4,000	ARP
	Co-investigator with Petersen, S R: Time-motion analysis of ice-hockey . . .			
	Fitness unit manager	OPR \$	6,000	RPWF
	Provincial and regional fitness resource centres	OPR \$	185,700	RPWF
	High velocity resistance training for ice hockey	OPR \$	8,000	SPC
Slack, T	Co-investigator with Hinings, C R: Management of change in provincial . . .			
	1987 North American Society for the Sociology of Sport Conference, November 5-7, 1987	CFC \$	500	ASC
	Co-investigator with Hall, A: The status of women in selected . . .			
	Co-investigator with Hinings, C R (Business, Organizational Analysis): Planning, organization and implementation . . .			
	A National Conference on Sport Administration	CFC \$	5,000	SPC
Smith, M	An alternative model for a family/community developmental hockey program for children up to about 12 years of age	OPR \$	4,900	ASC
Walsh, C	Co-investigator with Steadward, R D (Athletic Services): A kinematic analysis of wheelchair . . .			
Watkinson, E J	The effects of motor competency on the intergration of mentally handicapped children in physical activity	OPR \$	8,700	CFLRI

Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Conferences	2	\$ 5,500	NSERC	1	\$ 9,476
Operating	15	\$ 361,190	Other Provincial	7	\$ 238,584
Total	17	\$ 366,690	Other Federal	7	\$ 52,700
			Other Agencies	2	\$ 65,930
			Total	17	\$ 366,690

Department of Recreation and Leisure Studies

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Heron, R P	Foreign delegate attendance building activities for the 1st World Congress of the World Leisure and Recreation Association, Lake Louise, 1988	CTR \$	13,989	ATOUR
Quinney, H A	Alberta Olympic game plan, athlete testing program	OPR \$	15,000	ASC
Sefton, J M	Co-investigator with Wankel, L M: An analysis of children's casual . . .			
Wankel, L M	Increasing exercise adherence through counseling based on Janis' (1983) short-term counseling guidelines	OPR \$	8,939	CFLRI
	An analysis of children's casual attributions following sport outcomes	OPR \$	3,344	CFLRI

Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Contracts	1	\$ 13,989	Other Provincial	2	\$ 28,989
Operating	3	\$ 27,283	Other Federal	2	\$ 12,283
Total	4	\$ 41,272	Total	4	\$ 41,272

Faculty of Rehabilitation Medicine

Type of Award	No.	Amount	Source of Funds	No.	Amount
Operating	5	\$ 157,860	NSERC	1	\$ 12,500
Total	5	\$ 157,860	Other Provincial	1	\$ 75,000
			Other Federal	1	\$ 26,951
			Other Agencies	2	\$ 43,409
			Total	5	\$ 157,860

Department of Physical Therapy

Investigator	Project Title	Award	Amount	Agency
Kumar, S				
	Functional evaluation of human back	OPR	\$ 75,000	ACOH
	Static and dynamic strength	OPR	\$ 12,500	NSERC
Piper, M C				
	Impact of pre-term birth of the neuromotor development of the premature infant	OPR	\$ 26,951	HWC
	Effect of early physical therapy on the neuromotor status of the high risk infant	OPR	\$ 12,000	MDBDF

Type of Award	No.	Amount	Source of Funds	No.	Amount
Operating	4	\$ 126,451	NSERC	1	\$ 12,500
			Other Provincial	1	\$ 75,000
			Other Federal	1	\$ 26,951
			Other Agencies	1	\$ 12,000
			Total	4	\$ 126,451

Department of Speech Pathology and Audiology

Investigator	Project Title	Award	Amount	Agency
Boberg, E				
	An investigation of the central nervous system differences in stutterers and their relationships to severity and success in therapy	OPR	\$ 31,409	MSI
Gough, K				
	Co-investigator with Faulkner, M G (Engineering, Mechanical Engineering): Hearing protection device evaluation . . .			
Hagler, P				
	Co-investigator with Boberg, E: An investigation of the central . . .			

Operating	Other Agencies	1	\$ 31,409
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Faculté Saint-Jean

Type of Award	No.	Amount	Source of Funds	No.	Amount
Operating	1	\$ 5,500	Other Federal	1	\$ 5,500
Total	1	\$ 5,500	Total	1	\$ 5,500

Faculté Saint-Jean

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Allaire, G	Septieme colloque du CEFCO: Ecriture et politique	OPR	\$ 5,500	SSC
Cadrin, G	Co-investigator with Allaire, G: Septieme colloque du CEFCO: Ecriture . . .			

Faculty of Science

Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Conferences	5	\$ 55,750	AHFMR	8	\$ 524,225
Contracts	49	\$ 2,326,231	MRC	2	\$ 87,554
Equipment	24	\$ 1,054,513	NSERC	292	\$ 8,888,346
Infrastructure	8	\$ 285,508	SSHRC	2	\$ 18,730
Operating	322	\$ 8,925,172	Other Provincial	29	\$ 1,364,288
Technology Transfer	4	\$ 352,580	Other Federal	35	\$ 1,098,131
Total	412	\$ 12,999,755	Other Agencies	44	\$ 1,018,480
			Total	412	\$ 12,999,755

Department of Botany

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Bayer, R J	Evolutionary investigations on the <i>Antennaria rosea</i> (asteraceae:Inuleae) Agamic complex	OPR	\$ 7,474	NSERC
Cass, D D	Research on gamete cell fusion in flowering plants; Brassica root infection by pseudomona	OPR	\$ 15,000	NSERC
Cossins, E A	Folate and amino acid metabolism in plants	OPR	\$ 59,666	NSERC
Dale, M R T	Spatial distribution in communities of Saxicolous lichens	OPR	\$ 15,000	NSERC
Denford, K E	Shrub recolonization patterns in disturbed areas of the Rocky Mountain foothills - student M W Zbigniewicz	OPR	\$ 9,045	AERT
	Biosystematics and chemosystematics of northern vascular plants	OPR	\$ 21,817	NSERC
	Wildflower brochure - student Elizabeth Beaubien	OPR	\$ 4,000	RPWF
Gifford, D J	Cellular and molecular control of protein storage reserve mobilization in germinating pine seeds	OPR	\$ 35,000	NSERC
Hickman, M	Aquatic ecological, paleoenvironmental and algal studies in Alberta	OPR	\$ 20,160	NSERC
Hoddinott, J	Nutritional and environmental influences on carbon partitioning	OPR	\$ 12,977	NSERC
	Co-investigator with Taylor, G J: Basic and applied aspects of aluminum . . .			
La Roi, G H	The impacts of Wood Bison on sedge meadow vegetation, Mackenzie Bison Sanctuary, N.W.T. (graduate student: David L. Smith)	CTR	\$ 1,750	EC
	Structure and function of boreal forest ecosystems: synthesis	OPR	\$ 12,000	NSERC
Packer, J G	Northern supplement - Taxonomic and phytogeographical studies in the flora of western Canada and the Arctic	OPR	\$ 1,360	NSERC
	Taxonomic and phytogeographical studies in the flora of western Canada and the Arctic	OPR	\$ 4,800	NSERC
Stockey, R A	Cretaceous and tertiary plants from western Canada	OPR	\$ 23,040	NSERC
Taylor, G J	Physiological mechanisms of aluminum tolerance in <i>Triticum aestivum</i> and other plants	OPR	\$ 17,280	NSERC
	Basic and applied aspects of aluminum and manganese tolerance in Canadian wheat cultivars	OPR	\$ 50,000	NSERC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Vitt, D H					
	Co-investigator with Prepas, E E (Zoology): Autoanalyer for phosphorus, nitrogen . . .				
	Co-investigator with Prepas, E E (Zoology): Meanook Biological Research Station . . .				
	The ecology and systematics of Bryophytes, and the characterization and development of the mire ecosystem	OPR	\$ 40,320	NSERC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Contracts	1	\$ 1,750	NSERC	15	\$ 335,894
Operating	17	\$ 348,939	Other Provincial	2	\$ 13,045
Total	18	\$ 350,689	Other Federal	1	\$ 1,750
			Total	18	\$ 350,689

Department of Chemistry

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Armour, M A				
	Recycling and disposal of chemical wastes	OPR	\$ 71,400	ACOH
	Continued research into recycling chemical waste and chemical methods for handling hazardous waste	OPR	\$ 4,655	DOCK
Ayer, W A				
	Lycopodium alkaloids: Potential therapeutic agents for the treatment of Alzheimer's disease	OPR	\$ 31,560	AMHAC
	Investigation of American Leaf Spot disease - In collaboration with the Universidad de Costa Rica	TTR	\$ 108,500	IDRC
	Editorial support services - To cover the cost of editorial support services and incidental expenses incurred by Dr W A Ayer as Editor of the Canadian Journal of Chemistry	CTR	\$ 55,000	NRC
	Co-investigator with Jordan, R B: Mass spectrometry service laboratory . . .			
	Phytochemical investigation of important forest diseases. Blue stain fungi associated with the mountain pine beetle	OPR	\$ 67,000	NSERC
	Co-investigator with Tanner, D D: HP 5965A IRD. GC/FTIR . . .			
	Co-investigator with Graham, W A G: Mass spectrometer and data system . . .			
	Co-investigator with Jordan, R B: Alberta High Field NMR Centre . . .			
	Structural and synthetic studies on biologically interesting natural products	OPR	\$ 100,025	NSERC
Bertie, J E				
	Vibrational spectroscopy, optical and dielectric constants	OPR	\$ 38,399	NSERC
	Co-investigator with Scarfe, C M (Geology): High-pressure laboratory for research . . .			
Birss, F W				
	Molecular spectroscopy and structure	OPR	\$ 10,000	NSERC
Brown, R S				
	Physical organic studies of hydrolysis reactions, electrophilic halogenation and enzyme models	OPR	\$ 50,305	NSERC
	Co-investigator with Graham, W A G: Mass spectrometer and data system . . .			
Browne, L M				
	Co-investigator with Ayer, W A: Investigation of American Leaf . . .			
Cantwell, F F				
	Liquid chromatography, ion exchange and solvent extraction	OPR	\$ 49,345	NSERC
Cavell, R G				
	Synthetic inorganic chemistry and electron spectroscopy	OPR	\$ 35,000	NSERC
Clarke, B L				
	Stability, dynamics and chaos in complex chemical networks.	OPR	\$ 16,320	NSERC
Clive, D L J				
	Synthesis of leukotriene inhibitors by radical chemistry	TTR	\$ 18,000	MFC
	Synthesis of leukotriene inhibitors by radical chemistry	TTR	\$ 24,000	NSERC
	Studies in synthetic methodology and natural products synthesis	OPR	\$ 49,267	NSERC
	Co-investigator with Jordan, R B: Alberta High Field NMR Centre . . .			
Cowie, M				
	Metal-metal cooperativity in small molecule activation and catalysis	OPR	\$ 40,129	NSERC
	Infrared Spectrophotometer	EQP	\$ 24,730	NSERC
	Co-investigator with Jordan, R B: Alberta High Field NMR Centre . . .			
Dovichi, N				
	Laser-based microchemical analysis	OPR	\$ 48,615	NSERC
	Ultraviolet helium cadmium laser	EQP	\$ 20,000	NSERC
Dunford, H B				
	Heme enzyme mechanisms, oxygen activation in biology	OPR	\$ 54,267	NSERC
	Co-investigator with Westlake, D W (Microbiology): Technical support for fermentation . . .			

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Fraga, S	Structure and interactions	OPR	\$ 25,109	NSERC
	Accurate theoretical prediction of the energy levels of atoms and their positive ions, awarded 40 hours computer time (approx. value of \$4,000.00)	OPR		NSERC
Freeman, G R	Electrons in fluids, radiation chemistry	OPR	\$ 57,698	NSERC
Graham, W A G	Co-investigator with Jordan, R B: Alberta High Field NMR Centre . . .			
	Mass spectrometer and data system	EQP	\$ 196,000	NSERC
	Organometallic chemistry and C-H activation	OPR	\$ 70,000	NSERC
Harrison, D J	Investigations of internal potentials and concentration profiles within ion specific membranes	OPR	\$ 17,000	CIBAC
	Spectroscopic analysis of concentration profiles within membranes	OPR	\$ 25,000	NSERC
	Co-investigator with Baltes, H P (Engineering, Electrical Engineering): Integrated sensors on silicon . . .			
	Membranes and chemically sensitive devices	OPR	\$ 26,000	NSERC
Hepler, L G	Kinetics and energetics of oxidation of bitumen, solubilities of gases, and properties of emulsions	CTR	\$ 89,992	AOSTR
	Chemical thermodynamics	OPR	\$ 50,879	NSERC
Hindsgaul, O	Waters DeltaPrep - 3000 preparative chromatographic system	EQP	\$ 43,700	AHFMR
	To develop novel processes for the large scale synthesis (kilogram scale) of trisaccharides A and B of the human blood group ABO systems	CTR	\$ 97,630	CHEM
	Co-investigator with Graham, W A G: Mass spectrometer and data system . . .			
	Development of ELISA assays for glycosyltransferases	OPR	\$ 42,400	NSERC
	Biological functions of complex carbohydrates	OPR	\$ 19,200	NSERC
	Co-investigator with Jordan, R B: Alberta High Field NMR Centre . . .			
	Co-investigator with Vederas, J C: Liquid scintillation counter . . .			
Hogg, A M	Co-investigator with Kebarle, P: Instrumental and analytical methodology . . .			
Horlick, G	Development and application of methods and systems for spectrochemical analysis	OPR	\$ 90,000	NSERC
	Direct reading inductively coupled plasma-atomic emission spectrometer	EQP	\$ 150,000	NSERC
	Co-investigator with Kebarle, P: Instrumental and analytical methodology . . .			
Huzinaga, S	Computational study of electronic properties of molecules	OPR	\$ 41,279	NSERC
Jordan, R B	Tri-tech dynamic instruments stopped-flow system	EQP	\$ 18,281	NSERC
	Ligand substitution and electron transfer mechanisms of transition metal complexes	OPR	\$ 42,264	NSERC
	Mass spectrometry service laboratory	INF	\$ 32,000	NSERC
	Alberta High Field NMR Centre	INF	\$ 38,400	NSERC
	Co-investigator with Horlick, G: Direct reading inductively coupled . . .			
Kebarle, P	Instrumental and analytical methodology development of the SCIEX TAGA 6000 Mass Spectrometer	TTR	\$ 202,080	NSERC
	Gas phase ion chemistry - relationships with ions in solution	OPR	\$ 106,241	NSERC
Keil, M	Intermolecular potentials: Inter and intra-molecular energy transfer	OPR	\$ 21,120	NSERC
Kopecky, K R	Co-investigator with Tanner, D D: HP 5965A IRD. GC/FTIR . . .			
Kotovych, G	High-field NMR studies of biological systems	OPR	\$ 21,120	NSERC
	Co-investigator with Jordan, R B: Alberta High Field NMR Centre . . .			
Kratochvil, B	Co-investigator with Horlick, G: Direct reading inductively coupled . . .			
	New sampling and ion speciation methods for chemical analysis	OPR	\$ 39,359	NSERC
Lemieux, R U	Biological recognition at the molecular level	OPR	\$ 117,720	NSERC
	Co-investigator with Jordan, R B: Alberta High Field NMR Centre . . .			
Liu, H J	(1) Development of organic synthetic methods. (2) Synthetic studies on natural products.	OPR	\$ 42,239	NSERC
	Co-investigator with Tanner, D D: HP 5965A IRD. GC/FTIR . . .			
	Co-investigator with Jordan, R B: Alberta High Field NMR Centre . . .			

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Lown, J W				
	DNA binding specificity of novel anticancer agents	EQP \$	24,265	AHFMR
	Mode of action of antitumor antibiotics	OPR \$	71,905	NCI
	Synthetic and mechanistic research in the fields of heterocyclic and antibiotic chemistry	OPR \$	70,000	NSERC
	Co-investigator with Graham, W A G: Mass spectrometer and data system . . .			
	Co-investigator with Tanner, D D: HP 5965A IRD. GC/FTIR . . .			
	LKB ultrosan XL laser densitometer	EQP \$	24,265	NSERC
	DNA sequence specific anticancer and antiviral agents	OPR \$	67,000	NSERC
	The mechanism of antitumor action of nitrosoureas	OPR \$	56,400	USNIH
Martin, J S				
	First year CAL curriculum	OPR \$	4,000	UC
McClung, R E D				
	Two dimensional NMR spectroscopy	OPR \$	27,840	NSERC
	Co-investigator with Jordan, R B: Alberta High Field NMR Centre . . .			
Robins, M J				
	Co-investigator with Cass, C E (Medicine, J S McEachern Laboratory): Nucleoside transport systems in . . .			
	Compounds related to nucleic acids	OPR \$	67,842	NSERC
Strausz, O P				
	Oil fingerprinting and a facies framework for the Wabiskaw member of the clearwater formation: a geological perspective	CTR \$	30,310	AENCL
	Chemical studies on resins and asphaltenes related to the thermal changes occurring during in situ oil production	CTR \$	150,000	AOSTR
	Upgrading of Alberta's heavy oils by superacid catalyzed hydrocracking	CTR \$	60,000	AOSTR
	Coal research development program	CTR \$	123,150	ARC
	Characterization of cold lake heavy crude oils for synthetic liquid fuel production	OPR \$	8,000	IOL
	Co-investigator with Tanner, D D: HP 5965A IRD. GC/FTIR . . .			
	Co-investigator with Graham, W A G: Mass spectrometer and data system . . .			
	Fundamental studies in petroleum, free radical and photochemistry	OPR \$	43,200	NSERC
	Co-investigator with Jordan, R B: Mass spectrometry service laboratory . . .			
Takats, J				
	Co-investigator with Graham, W A G: Mass spectrometer and data system . . .			
	Organometallic complexes of the transition metals and f-elements	OPR \$	43,201	NSERC
	Co-investigator with Jordan, R B: Alberta High Field NMR Centre . . .			
Tanner, D D				
	Co-investigator with Graham, W A G: Mass spectrometer and data system . . .			
	HP 5965A IRD. GC/FTIR	EQP \$	92,331	NSERC
	Co-investigator with Jordan, R B: Mass spectrometry service laboratory . . .			
	Studies on the mechanism of free radical reactions	OPR \$	41,280	NSERC
Thorson, W R				
	Studies in theoretical chemistry: (1) Atomic collision theory (2) Vibrational dynamics	OPR \$	32,640	NSERC
Vederas, J C				
	3rd Int. Symposium on Biosynthesis	CFC \$	15,000	AHFMR
	Liquid scintillation counter	EQP \$	37,245	NSERC
	Co-investigator with Graham, W A G: Mass spectrometer and data system . . .			
	Co-investigator with Westlake, D W (Microbiology): Technical support for fermentation . . .			
	Co-investigator with Tanner, D D: HP 5965A IRD. GC/FTIR . . .			
	Mechanism and inhibition of polyketide and amino acid biosynthesis	OPR \$	69,240	NSERC
	Co-investigator with Jordan, R B: Mass spectrometry service laboratory . . .			
	Co-investigator with Jordan, R B: Alberta High Field NMR Centre . . .			

Type of Award	No.	Amount	Source of Funds	No.	Amount
Conferences	1	\$ 15,000	AHFMR	3	\$ 82,965
Contracts	7	\$ 606,082	NSERC	50	\$ 2,717,875
Equipment	10	\$ 630,817	Other Provincial	6	\$ 526,102
Infrastructure	2	\$ 70,400	Other Federal	2	\$ 163,500
Operating	46	\$ 2,123,463	Other Agencies	9	\$ 307,900
Technology Transfer	4	\$ 352,580	Total	70	\$ 3,798,342
Total	70	\$ 3,798,342			

Department of Computing Science

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Armstrong, W W	Co-investigator with Marsland, T A: Distributed computing research . . .			
	Miscellaneous experiments in computing	OPR \$	18,197	NSERC
Cabay, S	Algebraic algorithms	OPR \$	13,000	NSERC
	Co-investigator with Marsland, T A: Distributed computing research . . .			
Chan, E P	A comprehensible database design theory	OPR \$	2,596	NSERC
Culberson, J C	Design and analysis of efficient data structures and algorithms	OPR \$	15,000	NSERC
Davis, W A	Co-investigator with Caelli, T M (Psychology): Computer assisted mammography . . .			
	Digital techniques in image processing	OPR \$	22,940	NSERC
	Co-investigator with Marsland, T A: Distributed computing research . . .			
Dobosiewicz, W	Efficient operations on non-disjoint sets	OPR \$	15,000	NSERC
Elio, R E	Machine learning and knowledge-based systems	OPR \$	21,000	NSERC
	Co-investigator with Marsland, T A: Distributed computing research . . .			
Gburzynski, P	Performance of computing systems	OPR \$	9,000	NSERC
Goebel, R G	Applications of logic-based automatic theory formation	OPR \$	16,000	NSERC
Green, M W	Acquisition of IPS user interface prototyping system	CTR \$	10,000	CMC
	Co-investigator with Marsland, T A: Distributed computing research . . .			
	User interfaces and computer animation	OPR \$	22,000	NSERC
Joe, B	Mesh generation using computational geometry	OPR \$	15,000	NSERC
Kamal, A N	Access protocols for optical fiber-based local area networks	OPR \$	13,500	NSERC
Li, X	Parallel processing approaches for computer vision and pattern recognition	OPR \$	17,000	NSERC
Marsland, T A	Distributed system studies	OPR \$	42,900	NSERC
	Distributed computing research group	INF \$	66,240	NSERC
Ozsu, M T	Interfacing distributed databases with operating systems	OPR \$	14,000	NSERC
	Co-investigator with Marsland, T A: Distributed computing research . . .			
Pelletier, F J	Co-investigator with Marsland, T A: Distributed computing research . . .			
	Natural language understanding and heuristic theorem proving	OPR \$	17,280	NSERC
Rudnicki, P	Specification and verification of communication protocols	OPR \$	12,500	NSERC
Schaeffer, J	Distributed tree searching	OPR \$	19,000	NSERC
Schubert, L K	Further development of a semantic net system with inferential and question-answering capabilities, and of methodologies for language analysis and generation	CTR \$	171,409	BOE
	Language understanding, question-answering, and robotics	OPR \$	25,066	NSERC
	Co-investigator with Marsland, T A: Distributed computing research . . .			
Stewart, L K	Algorithms for decomposable bipartite graphs	OPR \$	14,000	NSERC
Szafron, D A	Graphical user interfaces for programming environments	OPR \$	10,000	NSERC
	Co-investigator with Marsland, T A: Distributed computing research . . .			
Tartar, J	Investigation of interactive and distributed computer systems	OPR \$	25,406	NSERC
	Co-investigator with Marsland, T A: Distributed computing research . . .			
White, L J	Research in computer program testing	OPR \$	27,950	NSERC
	Co-investigator with Marsland, T A: Distributed computing research . . .			
You, J H	Logic programming for artificial intelligence: An approach based on building in theories	OPR \$	17,000	NSERC

<i>Investigator</i>	<i>Project Title</i>		<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	2	\$ 181,409	NSERC	25	\$ 491,575
Infrastructure	1	\$ 66,240	Other Federal	1	\$ 10,000
Operating	24	\$ 425,335	Other Agencies	1	\$ 171,409
Total	27	\$ 672,984	Total	27	\$ 672,984

Department of Genetics

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Addison, W R					
	Purification of a protein required for the regulation of a rat a2u-globulin gene by glucocorticoids	OPR	\$ 124,621	AHFMR	
	Purification of a regulatory DNA-binding protein from rat liver	OPR	\$ 26,300	NSERC	
Ahmed, A					
	Mechanism of DNA transposition in E. Coli	OPR	\$ 44,520	NSERC	
Bell, J B					
	Isolation of informational supressors in Drosophila melanogaster and tRNA nucleoside modification deficient mutants in Saccharomyces cerevisiae	OPR	\$ 20,000	NSERC	
	Co-investigator with Roy, K L (Microbiology): Applied biosystems model 381A-01 . . .				
Hastings, P J					
	The mechanisms of recombination in Saccharomyces cerevisiae	OPR	\$ 34,000	NSERC	
Hodgetts, R B					
	Molecular basis of the response to selection for increased body weight	OPR	\$ 12,000	AART	
	Molecular genetic engineering of growth parameters in mice and cattle	OPR	\$ 97,000	NSERC	
	Hormonal aspects of gene regulation in Drosophila	OPR	\$ 44,520	NSERC	
	Co-investigator with Roy, K L (Microbiology): Applied biosystems model 381A-01 . . .				
Kuspira, J					
	Cytogenetic studies of the A genome in Triticum	OPR	\$ 20,301	NSERC	
Nargang, F E					
	Nuclear mitochondrial gene interactions	EQP	\$ 18,810	AHFMR	
	Mitochondrial gene expression in Neurospora crassa	OPR	\$ 29,438	NSERC	
	Co-investigator with Dean (Agriculture and Forestry): Genetic variation and adaptation . . .				
Nash, D					
	Molecular and genetic analysis of purine metabolism in Drosophila	OPR	\$ 40,000	NSERC	
Reha-Krantz, L J					
	Studies on the biochemical basis of spontaneous mutation: The function of the DNA polymerase	OPR	\$ 50,295	NCI	
	Co-investigator with Westlake, D W (Microbiology): Technical support for fermentation . . .				
	Studies on the biochemical basis of mutation	OPR	\$ 32,000	NSERC	
Russell, M A					
	Genetic control of developmental pathways in Drosophila	OPR	\$ 33,000	NSERC	
Tyler, J M					
	Co-investigator with Stein, R B (Medicine, Physiology): Instrumentation for developing . . .				
von Borstel, R C					
	A test of the theory of a threshold during salt-induced mutagenesis in yeast	OPR	\$ 30,000	ILSI	
	Moleular analysis of mutation spectra induced by "nonmutagenic" carcinogens and alkylating agents	OPR	\$ 70,722	NSERC	
	Origin of spontaneous mutations	OPR	\$ 23,280	NSERC	
	Co-investigator with Roy, K L (Microbiology): Applied biosystems model 381A-01 . . .				
	Metabolic control of post-irradiation DNA repair	CTR	\$ 22,640	PRON	
	A test of the theory of a threshold during salt-induced mutagenesis in yeast	OPR	\$ 30,000	RSI	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Contracts	1	\$ 22,640	AHFMR	2	\$ 143,431
Equipment	1	\$ 18,810	NSERC	13	\$ 515,081
Operating	18	\$ 761,997	Other Provincial	1	\$ 12,000
Total	20	\$ 803,447	Other Agencies	4	\$ 132,935
			Total	20	\$ 803,447

Department of Geography

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Campbell, I A	Erosion rates, sediment delivery ratios and the evolution of the Red Deer badlands	OPR \$	12,480	NSERC
Charlton, R B	Analysis of polarization diversity radar data in central Alberta hailstorms	OPR \$	13,000	EC
England, J	Quaternary glaciation, glacioisostasy and paleoenvironment of the high Arctic - \$6,900 paid to Polar Continental Shelf Project	OPR		NSERC
	Quaternary glaciation, glacioisostasy and paleoenvironment of the high Arctic	OPR \$	24,000	NSERC
Hodgson, M J	Transport network-based geographic information systems	OPR \$	14,000	NSERC
	Facility location models for developing countries	OPR \$	13,980	SSHRC
Jackson, E L	Leisure, recreation and the social sciences	CFC \$	4,750	SSHRC
Kershaw, G P	Studies of environmental effects of disturbances in the subarctic	CTR \$	40,290	CFS
	The role of native plant species in pipeline revegetation programmes	OPR \$	8,000	IOL
Lozowski, E P	Ship icing measurement and forecasting	OPR \$	15,000	EC
	Soviet marine icing data	CTR \$	9,980	EC
	Measuring icing related parameters on a Canadian ship	CTR \$	8,670	EC
	Modelling and forecasting the ice growth rates on sea-going vessels	OPR \$	6,471	NATO
	Forecasting of ice growth rates and ice loads due to icing on sea-going ships	CTR \$	29,850	NRC
	Co-investigator with Gates, E M (Engineering, Mechanical Engineering): Marine icing wind tunnel . . .			
	Marine icing	OPR \$	69,500	NSERC
	Instrumentation for the measurement of splashing and ice accretion on a Canadian ship	EQP \$	28,092	NSERC
	Icing research for marine applications	OPR \$	19,920	NSERC
	Icing model	CTR \$	40,000	STAT
	Extensions to a wet snow accretion model for transmission lines and applications to Alberta	CTR \$	20,000	TAUC
	Modelling vessel icing	CTR \$	9,999	USDA
Muller, J C	Geo-processing and fractals	OPR \$	20,000	NSERC
Wilson, J D	Flow through a shelterbelt	OPR \$	14,000	NSERC
Zakrzewski, W P	Co-investigator with Lozowski, E P: Measuring icing related parameters . . .			

<i>Type of Award</i>	<i>No.</i>	<i>Amount</i>	<i>Source of Funds</i>	<i>No.</i>	<i>Amount</i>
Conferences	1	\$ 4,750	NSERC	8	\$ 201,992
Contracts	7	\$ 158,789	SSHRC	2	\$ 18,730
Equipment	1	\$ 28,092	Other Federal	6	\$ 116,790
Operating	12	\$ 230,351	Other Agencies	5	\$ 84,470
Total	21	\$ 421,982	Total	21	\$ 421,982

Department of Geology

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Baadsgaard, H	Geochronometric analyses	CTR \$	12,000	ARUM
	Geochronology and petrogenesis of the Archean Kaminak Lake alkaline intrusion and the surrounding country rock	OPR \$	5,500	EMRC
	Strontium and Sm-Nd isotope analyses	CTR \$	14,286	NSDME
	Isotope geology of: selected crustal areas, time-scale horizons, uranium mineralization and potash salt deposition	OPR \$	41,280	NSERC
	Strontium isotope analyses of 15 core chip samples from the western Canadian sedimentary basin	CTR \$	4,285	ULTRA
Burwash, R A	Western Canada basin heat generation data base	OPR \$	6,000	EMRC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Chatterton, B D				
	Conodont biostratigraphy and paleoecology of the Famennian Palliser formation and subsurface equivalents, Alberta and British Columbia	OPR \$	3,000	EMRC
	Systematics, biostratigraphy, paleoecology and paleoecology of paleozoic trilobites, conodonts and rostroconchs	OPR \$	34,390	NSERC
Cruden, D M				
	The stability of natural slopes in rock	OPR \$	28,800	NSERC
Erdmer, P				
	Structure and tectonics of allochthonous terranes of central Yukon	OPR \$	16,600	NSERC
Fox, R C				
	Upper cretaceous and paleocene tetrapods from western Canada	OPR \$	39,446	NSERC
Johnston, D I				
	Co-investigator with Chatterton, B D: Conodont biostratigraphy and paleoecology . . .			
Jones, B				
	Diagenetic regimes associated with unconformities in carbonate sequences	OPR \$	34,066	NSERC
Lambert, R S J				
	Lithoprobe: Isotope studies of granitoids in southeastern B C	OPR \$	8,000	NSERC
	Isotope studies of the western Cordillera and of the mantel	OPR \$	29,000	NSERC
Lerbekmo, J F				
	Magnetostratigraphic correlations in upper Cretaceous strata between the plains and foothills of southern Alberta	CTR \$	3,018	EMRC
	Upper cretaceous - paleocene magnetostratigraphic and geochemical correlations	OPR \$	4,000	EMRC
Longstaffe, F J				
	1) To develop numerical modelling techniques for the study of authigenic clay minerals in clastic sedimentary basins, and 2) To quantify the role that various diagenetic parameters play in controlling the formation of authigenic clays in zones of fluid mixing	OPR \$	8,000	IOL
	Physicochemical investigations of water-rock interaction in low temperature environments	OPR \$	19,247	NSERC
Morton, R D				
	Mineralogical and geochemical studies on the Dawn Lake uranium deposit, Saskatchewan	OPR \$	11,680	NSERC
Muehlenbachs, K				
	Isotopic studies on coal bitumen co-processing schemes	OPR \$	62,685	AENR
	Isotopic mass balance measurements for determination of coal-derived liquid contribution into coprocessing distillates	CTR \$	50,000	EMRC
	Stable isotope exchange studies and their application to geological problems	OPR \$	28,000	NSERC
	Co-investigator with Scarfe, C M: High-pressure laboratory for research . . .			
	Lithoprobe phase II: An integrated study of petrology, isotope geochemistry and ore deposits on Vancouver Island	OPR \$	12,000	NSERC
Nesbitt, B E				
	Evaluation of the origin of mesothermal gold-quartz veins of the Canadian Cordillera	OPR \$	7,600	EMRC
	Field, experimental and theoretical investigations of the genesis of AU-AG mineralization in the Canadian Cordillera	OPR \$	20,000	NSERC
	Co-investigator with Muehlenbachs, K: Lithoprobe phase II: An integrated . . .			
Pemberton, S G				
	Co-investigator with Strausz, O P (Chemistry): Oil fingerprinting and a facies . . .			
	A facies framework for the Wabiskaw member of the Clearwater formation: A geological perspective	CTR \$	30,310	AENCL
	Regional stratigraphy and depositional history of the south Athabasca oil sand deposit	CTR \$	30,000	AOSTR
	Regional stratigraphy and depositional history of the Grand Rapids formation in the Cold Lake and Wabasca deposits: Implications for in situ extraction and development schemes	CTR \$	70,000	AOSTR
	Depositional model and hydrocarbon potential of the Ostracode event: Jenner area, s.e. Alberta	OPR \$	5,000	CHEL
	Ichnology and depositional history of the Viking formation, Crystal field, Alberta	OPR \$	8,000	IOL
	Sedimentologic and diagenetic study of the Jurassic, Basal Quartz, Ostracod and Glauconite sediments in the Gilby, Medicine River and Sylvan Lake areas (graduate student Ian Collar)	OPR \$	9,000	MAXIS
	Ichnology of storm, tidal, and marginal marine environments	OPR \$	26,000	NSERC
Rutter, N W				
	Studies of the Quaternary sediments along the Arctic coast between Paulatuk and Cape Barron (graduate student D. Kerr)	CTR \$	5,000	DINA
	Geochronological analysis of Beaufort Sea region sediment samples	CTR \$	15,030	EMRC
	Determination of amino acid ratios of fossil wood	CTR \$	1,170	GSC
	Quaternary history and amino acid dating techniques	OPR \$	30,000	NSERC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Scarfe, C M				
	The kinetics of calcite and dolomite dissolution in aqueous solutions at high temperatures	CTR	\$ 29,365	AOSTR
	Surface chemistry of clay mineral surfaces	OPR	\$ 10,000	ARC
	Physics and chemistry of silicate melts and magmas	OPR	\$ 37,390	NSERC
	Co-investigator with Muehlenbachs, K: Lithoprobe phase II: An integrated . . .			
	High-pressure laboratory for research in geochemistry and geophysics	INF	\$ 70,000	NSERC
Schwartz, F W				
	Migration of nonaqueous phase petroleum products in the saturated zone	OPR	\$ 8,000	IOL
	Exchange processes and mass transport in groundwater systems	OPR	\$ 38,400	NSERC
Smith, D G W				
	Mineralogy petrology genesis - Thor Lake	CTR	\$ 5,000	DINA
	Applications of the electron microprobe in mineralogy, petrology and meteoritics	OPR	\$ 32,000	NSERC
Toth, J				
	The use of hydrogeological mapping in hydrocarbon exploration study of the early cretaceous, deep basin region N.W. Alberta (graduate student Joanne Thompson)	OPR	\$ 2,500	CHEL
	Development of hydrogeological methods for petroleum exploration	OPR	\$ 10,000	NSERC
	Development of a hydrogeological approach to petroleum exploration	OPR	\$ 75,200	NSERC

Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	13	\$ 269,465	NSERC	21	\$ 641,499
Infrastructure	1	\$ 70,000	Other Provincial	5	\$ 202,050
Operating	33	\$ 710,784	Other Federal	11	\$ 105,318
Total	47	\$ 1,050,249	Other Agencies	10	\$ 101,381
			Total	47	\$ 1,050,249

Department of Mathematics

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Abbott, H L				
	Extremal problems in number theory and combinatorics	OPR	\$ 11,185	NSERC
Al-Salam, W				
	Sieved orthogonal polynomials, basic series, Geronimus orthogonal polynomials	OPR	\$ 17,856	NSERC
Allegretto, W				
	Behaviour of the solutions and of the spectrum of differential operators	OPR	\$ 15,894	NSERC
Allison, B N				
	Nonassociative algebras and constructions of lie algebras	OPR	\$ 8,035	NSERC
Andersen, K F				
	Weighted norm inequalities for integral operators	OPR	\$ 5,960	NSERC
Antonelli, P L				
	Mathematical models in chemical ecology	OPR	\$ 11,921	NSERC
Brungs, H H				
	Valuations and chain rings	OPR	\$ 8,941	NSERC
Cliff, G				
	Group rings and their representations	OPR	\$ 8,035	NSERC
Ditzian, Z				
	Moduli of smoothness, K-functional and rate of approximation	OPR	\$ 18,641	NSERC
Erbe, L H				
	Oscillation theory and boundary value problems	OPR	\$ 19,868	NSERC
Freedman, H I				
	Periodicity, stability and population ecology	OPR	\$ 15,894	NSERC
Hare, K E				
	Thin sets and multipliers	OPR	\$ 12,500	NSERC
Hoo, C S				
	Implicative semilattices	OPR	\$ 5,357	NSERC
Kharaghani, H				
	The excess of Hadamard matrices	OPR	\$ 5,000	NSERC
Klamkin, M S				
	Mathematical modelling, geometric inequalities	OPR	\$ 6,517	NSERC
Kunze, H P				
	Relativistic versus nonrelativistic classical physical theories	OPR	\$ 7,296	NSERC
Lau, A T M				
	Subspace of the left regular representation, crossed products and amenability	OPR	\$ 19,868	NSERC
Lewis, J E				
	Problems in convexity and combinatorial geometry	OPR	\$ 6,960	NSERC
Liu, C F A				
	Extremal problems in hypergraphs and geometry	OPR	\$ 5,960	NSERC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Ludwig, G	Exact solutions in general relativity	OPR	\$ 5,960	NSERC
Macki, J W	Applications of nonsmooth analysis in control theory and game theory: Asymptotic behaviour of solutions to ODE's	OPR	\$ 5,960	NSERC
Meir, A	(1) Lacunary spline approximation (2) Average branch size of rooted trees	OPR	\$ 20,505	NSERC
Millar, R F	The Rayleigh hypothesis and inverse scattering for the Helmholtz equation	OPR	\$ 8,035	NSERC
Moodie, T B	Linear and nonlinear waves in haemodynamics, fracture, and thermoelasticity	OPR	\$ 18,749	NSERC
Moon, J W	Research in graph theory	OPR	\$ 4,000	NSERC
Muldowney, J S	Qualitative theory of differential equations	OPR	\$ 6,174	NSERC
Oguztoreli, M N	Modelling, analysis and simulation of certain scientific and industrial problems	OPR	\$ 12,480	NSERC
Pianzola, A J	Lie theory	OPR	\$ 11,000	NSERC
Pounder, J R	Stability study of nonlinear recurrence relations	OPR	\$ 2,500	NSERC
Rhemtulla, A H	Topics in infinite solvable groups	OPR	\$ 11,921	NSERC
Riemenschneider, S D	Approximation of functions of one and several variables	OPR	\$ 18,641	NSERC
Rogers, T D	Discrete dynamical systems	OPR	\$ 7,142	NSERC
Sabbarao, M V	Studies in arithmetic functions and partition theoretic problems	OPR	\$ 14,285	NSERC
Sehgal, S K	Studies in group rings	OPR	\$ 23,842	NSERC
Sharma, A	Cardinal spline interpolation and interpolatory function theory	OPR	\$ 23,301	NSERC
Swaters, G E	Topographic de-phasing and amplitude modulation of resonant Rossby wave triad packets	OPR	\$ 7,000	EC
	Solitary and nonlinear wave and eddy models in geophysical fluid dynamics	OPR	\$ 15,000	NSERC
Tait, R J	Fluid flow in linear and nonlinear elastic and viscoelastic tubes	OPR	\$ 14,285	NSERC
Timourian, J G	Singularity theory and partial differential equations	OPR	\$ 10,714	NSERC
Tomczak-Jaegermann, N	Geometry of finite-dimensional Banach spaces	OPR	\$ 19,868	NSERC
Van Roessel, H J	A mixed Eulerian-Lagrangian formulation applied to supersonic aerodynamics	OPR	\$ 7,379	NSERC
Weiss, A R	Units of integral group rings: Centers of blocks as orders	OPR	\$ 11,921	NSERC
Wong, Y S	Unsteady transonic aerodynamics	CTR	\$ 60,000	DND
	Computational fluid dynamics and numerical algorithms on supercomputers	OPR	\$ 15,500	NSERC
Zeidan, V	Necessary and sufficient conditions for optimization and general control problems	OPR	\$ 5,010	NSERC
Zizler, V	Renorming theory of Banach spaces and its applications	OPR	\$ 11,185	NSERC

Type of Award	No.	Amount	Source of Funds	No.	Amount
Contracts	1	\$ 60,000	NSERC	44	\$ 517,045
Operating	45	\$ 524,045	Other Federal	2	\$ 67,000
Total	46	\$ 584,045	Total	46	\$ 584,045

Department of Microbiology

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Fedorak, P M	To evaluate methods of reducing cyanide toxicity to methanogenic consortia so that cyanide-containing phenolic wastewaters are more amenable to anaerobic treatment	OPR \$	8,000	IOL
	Co-investigator with Huck, P M (Engineering, Civil Engineering): Use of biological processes in . . .			
	High performance liquid chromatograph	EQP \$	20,300	NSERC
	Co-investigator with Hruday, S E (Engineering, Civil Engineering): Role of support media in enhancing . . .			
	Co-investigator with Huck, P M (Engineering, Civil Engineering): Bacterial growth rate measurement . . .			
	Co-investigator with Westlake, D W: Gas chromatograph . . .			
	Co-investigator with Huck, P M (Engineering, Civil Engineering): Process optimization for biological . . .			
	Anaerobic microbial degradation of phenols applied to industrial wastewater treatment	OPR \$	24,000	NSERC
	Co-investigator with Westlake, D W: The Response TM Gilford spectrophotometer . . .			
	Co-investigator with Jordan, R B (Chemistry): Mass spectrometry service laboratory . . .			
	Co-investigator with Hruday, S E (Engineering, Civil Engineering): Environmental process biotechnology . . .			
Jensen, S E	Co-investigator with Roy, K L: Applied biosystems model 381A-01 . . .			
	Co-investigator with Westlake, D W: The Response TM Gilford spectrophotometer . . .			
	Antibiotic production in streptomyces clavuligerus	OPR \$	38,520	NSERC
	Co-investigator with Westlake, D W: Technical support for fermentation . . .			
	Co-investigator with Westlake, D W: Collaborative Study with Dr. Wolfe, . . .			
Page, W J	Co-investigator with Westlake, D W: Technical support for fermentation . . .			
	Co-investigator with Westlake, D W: The Response TM Gilford spectrophotometer . . .			
	Iron and molybdenum accumulation in Azotobacter vinelandii	OPR \$	35,438	NSERC
Pickard, M A	Co-investigator with Westlake, D W: Editorial support services - To . . .			
	Co-investigator with Westlake, D W: The Response TM Gilford spectrophotometer . . .			
	Co-investigator with Westlake, D W: Technical support for fermentation . . .			
	Continuous and batch production of fungal enzymes and metabolites	OPR \$	23,000	NSERC
Roy, K L	Cloned human transfer RNA genes	OPR \$	20,000	NSERC
	Applied biosystems model 381A-01 single column automated DNA synthesizer, with printer	EQP \$	39,660	NSERC
Stemke, G W	Development of serodiagnosis for porcine mycoplasmal pneumonia	OPR \$	45,650	ARCA
	Co-investigator with Roy, K L: Applied biosystems model 381A-01 . . .			
Taylor, D E	Cloning of Campylobacter species genes for use as diagnostic DNA probes	OPR \$	45,470	NSERC
	Genetic studies of Campylobacters with special reference to mechanisms of tetracycline and erythromycin resistance	OPR \$	33,438	NSERC
Thompson, B G	Isolation and characterization of thermal and polymer mutants of symbiotic bacteria associated with entomogenous nematodes	OPR \$	19,000	BIOSI
von Tigerstrom, R G	Co-investigator with Westlake, D W: The Response TM Gilford spectrophotometer . . .			
	RNA-degrading enzymes in yeast. Extracellular products of lysobacter	OPR \$	21,452	NSERC

Investigator	Project Title	Award	Amount	Agency																																				
Westlake, D W																																								
	Editorial support services - To cover the cost of editorial support services and incidental expenses incurred by Dr D W S Westlake and Dr M A Pickard as editors of the Canadian Journal of Microbiology	CTR \$	49,373	NRC																																				
	Gas chromatograph	EQP \$	17,022	NSERC																																				
	Co-investigator with Roy, K L: Applied biosystems model 381A-01 . . .																																							
	Co-investigator with Prepas, E E (Zoology): Meanook Biological Research Station . . .																																							
	The Response TM Gilford spectrophotometer	EQP \$	22,720	NSERC																																				
	Co-investigator with Prepas, E E (Zoology): Autoanalyser for phosphorus, nitrogen . . .																																							
	Technical support for fermentation plant	INF \$	22,080	NSERC																																				
	Microbial metabolism of natural products	OPR \$	57,602	NSERC																																				
	Collaborative Study with Dr. Wolfe, Queen's University: Microbiological syntheses of novel beta-lactam compounds - \$101,840 (University of Alberta - \$43,000)	OPR		NSERC																																				
Yamamoto, T																																								
	Status of infectious hematopoietic necrosis virus in reproductive products of spawning salmonids	OPR \$	12,000	FOC																																				
	Analysis of infectious pancreatic necrosis virus associated with lake trout in Cornwall Lake and to determine its pathogenic potential to salmonid fishes	OPR \$	20,000	RPWF																																				
<table><tr><th>Type of Award</th><th>No.</th><th>Amount</th><th>Source of Funds</th><th>No.</th><th>Amount</th></tr><tr><td>Contracts</td><td>1</td><td>\$ 49,373</td><td>NSERC</td><td>14</td><td>\$ 420,702</td></tr><tr><td>Equipment</td><td>4</td><td>\$ 99,702</td><td>Other Provincial</td><td>2</td><td>\$ 65,650</td></tr><tr><td>Infrastructure</td><td>1</td><td>\$ 22,080</td><td>Other Federal</td><td>2</td><td>\$ 61,373</td></tr><tr><td>Operating</td><td>14</td><td>\$ 403,570</td><td>Other Agencies</td><td>2</td><td>\$ 27,000</td></tr><tr><td>Total</td><td>20</td><td>\$ 574,725</td><td>Total</td><td>20</td><td>\$ 574,725</td></tr></table>					Type of Award	No.	Amount	Source of Funds	No.	Amount	Contracts	1	\$ 49,373	NSERC	14	\$ 420,702	Equipment	4	\$ 99,702	Other Provincial	2	\$ 65,650	Infrastructure	1	\$ 22,080	Other Federal	2	\$ 61,373	Operating	14	\$ 403,570	Other Agencies	2	\$ 27,000	Total	20	\$ 574,725	Total	20	\$ 574,725
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Department of Physics																																								
Investigator	Project Title	Award	Amount	Agency																																				
Abegg, R																																								
	Co-investigator with Greeniaus, L G: Charge symmetry breaking in np . . .																																							
	Co-investigator with Miller, C A: IEP-188, Neutron-proton charge . . .																																							
	Co-investigator with Cameron, J M: University of Alberta - TRIUMF . . .																																							
	Co-investigator with Miller, C A: IEP-189, Knockout of deeply bound . . .																																							
Adler, J G																																								
	Electron tunneling spectroscopy	OPR \$	45,408	NSERC																																				
Cameron, J M																																								
	Co-investigator with Roy, G: Determination of the deuteron charge . . .																																							
	Winter Institute on Quantum Chromodynamics, Theory and Experiment, Lake Louise, March 6-12, 1988	CFC \$	10,000	NSERC																																				
	Co-investigator with Miller, C A: IEP-188, Neutron-proton charge . . .																																							
	Determination of the deuteron charge form factor using a deuteron tensor polarimeter	OPR \$	95,000	NSERC																																				
	University of Alberta - TRIUMF research-support staff salaries	OPR \$	369,000	NSERC																																				
	Co-investigator with McDonald, W J: Tagged photon induced reaction . . .																																							
Campbell, B A																																								
	Superunification and superstrings	OPR \$	17,000	NSERC																																				
Capri, A Z																																								
	Solutions in quantum field theory	OPR \$	19,100	NSERC																																				
Cumming, G L																																								
	To cover operating costs of the Edmonton Standard Seismograph Station of the Canadian National Network for Energy, Mines and Resources-Departmental award	OPR \$	17,000	EMRC																																				
	Systematics of Pb isotopic variations in ore and rocks - crustal seismic studies	OPR \$	28,000	NSERC																																				
Egerton, R F																																								
	Electron energy-loss spectroscopy in the electron microscope	OPR \$	31,680	NSERC																																				
Evans, M E																																								
	Co-investigator with Lerbekmo, J F (Geology): Upper cretaceous - paleocene magnetostratigraphic . . .																																							
	Quaternary paleomagnetic and archeomagnetic investigations	OPR \$	33,000	NSERC																																				
Franck, J P																																								
	Properties of quantum solids	OPR \$	33,600	NSERC																																				
Gortel, Z																																								
	Dynamical processes at solid surfaces	OPR \$	15,840	NSERC																																				
Gough, D I																																								
	Magnetovariation, magnetotelluric and paleomagnetic studies	OPR \$	64,320	NSERC																																				

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Gray, J	Stable isotope studies of tree rings, peat and cave deposits to determine past climate in Canada	OPR \$	9,600	NSERC
Green, C A	Co-investigator with Cameron, J M: University of Alberta - TRIUMF . . .			
Green, P W	University of Alberta VAX computer facility	INF \$	28,000	NSERC
	Co-investigator with Miller, C A: IEP-188, Neutron-proton charge . . .			
	Co-investigator with Greeniaus, L G: Charge symmetry breaking in np . . .			
	Co-investigator with Miller, C A: IEP-189, Knockout of deeply bound . . .			
Greeniaus, L G	Charge symmetry breaking in np elastic scattering at 350 MeV	OPR \$	14,000	NSERC
	Co-investigator with Miller, C A: IEP-189, Knockout of deeply bound . . .			
	Co-investigator with Miller, C A: IEP-188, Neutron-proton charge . . .			
	Co-investigator with Greeniaus, L G: Charge symmetry breaking in np . . .			
	Co-investigator with Cameron, J M: University of Alberta - TRIUMF . . .			
Hron, F	Theoretical investigation and computer simulation of seismic waves in real media	OPR \$	32,000	NSERC
Hube, D P	Photometric and spectroscopic studies of early type stars	OPR \$	10,176	NSERC
Hughes, D G	Nuclear magnetic resonance in solids and biological materials	OPR \$	18,048	NSERC
Hutcheon, D A	Co-investigator with Miller, C A: IEP-189, Knockout of deeply bound . . .			
	Co-investigator with McDonald, W J: Tagged photon induced reaction . . .			
	Co-investigator with Cameron, J M: University of Alberta - TRIUMF . . .			
Israel, W	Strong gravitational fields	OPR \$	42,912	NSERC
Jones, F W	Co-investigator with Rogers, J S: Measurement and analysis of long-term . . .			
	Investigation of the terrestrial heat flow of the Sverdrup Basin, Canadian Arctic Islands, and its relation to hydrocarbon maturation and migration	CTR \$	29,696	EMRC
	Study of sub-permafrost deep terrestrial heat flux in the areas of natural occurrence of gas hydrates in the Canadian north - phase I	CTR \$	30,000	EMRC
	Thermal gradients and hydrocarbon occurrences in the western Canadian sedimentary basin	OPR \$	8,000	IOL
	Electromagnetic induction, heat flow, and earth tides and tilts	OPR \$	26,880	NSERC
Jung, J A	1) Low temperature and high temperature attachment for X-ray diffractometer 2) High temperature programmable furnace	EQP \$	44,000	NSERC
Kamal, A N	Theoretical particle analysis	OPR \$	29,400	NSERC
Kanasewich, E R	Seismic tomography in steam injection projects	CTR \$	160,000	AOSTR
	Reprocessing and interpretation of selected industry acquired regional seismic reflection data from Melville Island	CTR \$	196,000	EMRC
	Co-investigator with Cumming, G L: To cover operating costs of the . . .			
	Analysis of Cold Lake seismic tomographic studies in steam injection projects and analysis of Cold Lake seismicity	OPR \$	8,000	IOL
	Geophysical investigation of the crust and mantle	OPR \$	66,133	NSERC
Kernahan, J A	Co-investigator with Pinnington, E H: Spectroscopic studies of atomic . . .			
Khanna, F C	Role of non-nucleon degrees of freedom in nuclei	OPR \$	30,720	NSERC
	Summer Institute in Theoretical Physics, University of Alberta	CFC \$	25,000	NSERC
Kitching, P	Co-investigator with Cameron, J M: University of Alberta - TRIUMF . . .			
	Pacman spectrometer	EQP \$	63,320	NSERC
	Co-investigator with Miller, C A: IEP-189, Knockout of deeply bound . . .			
Lapointe, C	Co-investigator with Greeniaus, L G: Charge symmetry breaking in np . . .			
McDonald, W J	Co-investigator with Miller, C A: IEP-189, Knockout of deeply bound . . .			
	Tagged photon induced reaction	OPR \$	95,000	NSERC
	Co-investigator with Greeniaus, L G: Charge symmetry breaking in np . . .			
	Co-investigator with Cameron, J M: Determination of the deuteron charge . . .			
	Co-investigator with Cameron, J M: University of Alberta - TRIUMF . . .			

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Miller, C A				
	Co-investigator with Cameron, J M: University of Alberta - TRIUMF . . .			
	IEP-189, Knockout of deeply bound nucleons	OPR \$	7,000	NSERC
	Co-investigator with Greeniaus, L G: Charge symmetry breaking in np . . .			
	IEP-188, Neutron-proton charge exchange amplitudes	OPR \$	12,000	NSERC
Moss, G A				
	Co-investigator with Cameron, J M: University of Alberta - TRIUMF . . .			
	Co-investigator with Kitching, P: Pacman spectrometer . . .			
	Co-investigator with Miller, C A: IEP-188, Neutron-proton charge . . .			
Neilson, G C				
	Co-investigator with Miller, C A: IEP-188, Neutron-proton charge . . .			
	Co-investigator with McDonald, W J: Tagged photon induced reaction . . .			
	Co-investigator with Cameron, J M: Determination of the deuteron charge . . .			
	Co-investigator with Cameron, J M: University of Alberta - TRIUMF . . .			
Nyland, E				
	Co-investigator with Kanasewich, E R: Seismic tomography in steam injection . . .			
	Investigation of seismicity and geology constraints for small scale geodynamics	OPR \$	14,600	NSERC
Olsen, W C				
	Co-investigator with Cameron, J M: University of Alberta - TRIUMF . . .			
	Co-investigator with Miller, C A: IEP-189, Knockout of deeply bound . . .			
	Co-investigator with McDonald, W J: Tagged photon induced reaction . . .			
Paranjape, B V				
	Interface properties of two crystals and surface plasma excitation	OPR \$	9,792	NSERC
Pinnington, E H				
	Spectroscopic studies of atomic energy levels	OPR \$	48,685	NSERC
Razavy, M				
	Scattering theory & Many-body problem	OPR \$	22,800	NSERC
Rogers, J S				
	Measurement and analysis of long-term tilt from the tiltmeter boreholes at the			
	AOSTRA/AMOCO GLISP pilot project	CTR \$	36,080	AOSTR
Rostoker, G				
	Geomagnetic activity in the auroral zone	OPR \$	60,000	NSERC
	Co-investigator with Scarfe, C M (Geology): High-pressure laboratory for research . . .			
Roy, G				
	Determination of the deuteron charge form factor at large q (squared)	OPR \$	15,795	NATO
	Co-investigator with Cameron, J M: Determination of the deuteron charge . . .			
	Co-investigator with Cameron, J M: University of Alberta - TRIUMF . . .			
Rozmus, W				
	Co-investigator with Offenberger, A A (Engineering, Electrical Engineering): KrF laser			
	facility . . .			
	Co-investigator with Offenberger, A A (Engineering, Electrical Engineering): KrF laser			
	technology and fusion . . .			
	Plasma theory: laser-plasma interactions	OPR \$	16,000	NSERC
Samson, J C				
	Data analysis and maintenance support for CANOPUS Tellurics	CTR \$	57,737	NRC
	Studies of ULF magnetic fields, and plasma waves in the Earth's magnetosphere	OPR \$	34,560	NSERC
Sheinin, S S				
	Transmission electron microscopy	OPR \$	28,800	NSERC
Sherif, H S				
	Theoretical studies in intermediate energy nuclear reactions	OPR \$	16,784	NSERC
Spanos, T J T				
	Thermo-mechanics of heavy oil reservoirs	CTR \$	95,304	AOSTR
	Dynamics of permeable media	OPR \$	10,000	NSERC
Stephenson, J				
	Theory of phase transitions, statistical mechanics and thermodynamics	OPR \$	9,830	NSERC
Stinson, G M				
	Co-investigator with Greeniaus, L G: Charge symmetry breaking in np . . .			
	Co-investigator with Cameron, J M: University of Alberta - TRIUMF . . .			
	Co-investigator with Cameron, J M: Determination of the deuteron charge . . .			
Takahashi, Y				
	Quantum field theory method in particle and Many-body physics	OPR \$	32,352	NSERC
Tkachuk, R				
	Co-investigator with Greeniaus, L G: Charge symmetry breaking in np . . .			
Umezawa, H				
	Study of ordered states in particle physics and Many-body problems	OPR \$	49,920	NSERC
Weichman, F L				
	Defect identification in GaAs	OPR \$	18,600	NSERC

Investigator	Project Title			Award	Amount	Agency
Woods, S B						
	Metals at low temperature			OPR	\$ 43,200	NSERC
Type of Award	No.	Amount		Source of Funds	No.	Amount
Conferences	2	\$	35,000	NSERC	44	\$ 1,732,060
Contracts	7	\$	604,817	Other Provincial	3	\$ 291,384
Equipment	2	\$	107,320	Other Federal	5	\$ 330,433
Infrastructure	1	\$	28,000	Other Agencies	3	\$ 31,795
Operating	43	\$	1,610,535	Total	55	\$ 2,385,672
Total	55	\$	2,385,672			

Department of Psychology *see also Faculty of Arts*

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Beck, C H M					
	Chronic benzodiazepine effects on rat social behavior	OPR \$	16,307	AMHAC	
Bourassa, C M					
	Factors influencing visible persistence and perceptual schemata	OPR \$	10,000	NSERC	
Caelli, T M					
	Computer assisted mammography	EQP \$	16,247	AHFMR	
	Cross-correlation techniques for human and computer pattern recognition	OPR \$	9,203	NSERC	
Di Lollo, V					
	To cover expenses connected with editorial work on the Canadian Journal of Psychology	OPR \$	14,600	CPSYA	
	Initial stages of visual information processing	OPR \$	36,863	NSERC	
Dobbs, A R					
	Minor head injury and accident prevention	OPR \$	46,750	ACOH	
	A longitudinal study of memory changes in normal aging and dementia	OPR \$	40,000	AMHAC	
	Co-investigator with Rule, B G (Arts): Environmental influences on the . . .				
Grant, D S					
	Short-term retention in pigeons	OPR \$	20,301	NSERC	
Heth, C D					
	Processes of spatial search	OPR \$	10,254	NSERC	
Kingma, J					
	Memory development in disabled and mentally retarded children	OPR \$	12,000	NSERC	
Robertson, A M					
	Neural substrates of prefrontal cortex self-stimulation and of neuroleptic drugs	OPR \$	14,880	NSERC	
Rozeboom, W W					
	Quadratic factor analysis	OPR \$	3,840	NSERC	
Rule, S J					
	Judgements of perceptual magnitudes	OPR \$	23,937	NSERC	
Spetch, M L					
	Memory for time and space	OPR \$	11,417	NSERC	
Treit, D R					
	Models and mechanisms of anxiolytic drug action	OPR \$	13,584	NSERC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Equipment	1	\$ 16,247	AHFMR	1	\$ 16,247
Operating	15	\$ 283,936	NSERC	11	\$ 166,279
Total	16	\$ 300,183	Other Provincial	3	\$ 103,057
			Other Agencies	1	\$ 14,600
			Total	16	\$ 300,183

Department of Statistics and Applied Probability

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Al-Hussaini, A				
	Stochastic processes	OPR \$	8,388	NSERC
Aly, E E A				
	On some strong and weak approximations and their applications in nonparametric statistics	OPR \$	7,200	NSERC
Elliott, R J				
	Filtering and smoothing of stochastic processes.	OPR \$	15,000	NSERC
	Filtering of jump processes	CTR \$	28,003	USAF
	Point processes and approximation	CTR \$	39,936	USDA
Hooper, P M				
	Experimental randomization and statistical models	OPR \$	11,146	NSERC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Karunamuni, R J					
On the empirical Bayes procedure		OPR	\$ 6,000	NSERC	
McGregor, J R					
Autocorrelation in the paired comparison of time series		OPR	\$ 3,979	NSERC	
Statistical service centre		INF	\$ 14,000	NSERC	
Prasad, N G N					
Small area estimation:Jackknife procedure for variance component models		OPR	\$ 6,000	NSERC	
Sheahan, J N					
Robust statistical inference		OPR	\$ 3,979	NSERC	
Wiens, D P					
Robust statistical methods		OPR	\$ 5,097	NSERC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Contracts	2	\$ 67,939	NSERC	10	\$ 80,789
Infrastructure	1	\$ 14,000	Other Agencies	2	\$ 67,939
Operating	9	\$ 66,789	Total	12	\$ 148,728
Total	12	\$ 148,728			

Department of Zoology

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
Addicott, J F	Regulation of costs and benefits in mutualistic systems	OPR \$	27,500	NSERC
Boag, D A	Feed costs associated with overwintering birds	OPR \$	1,400	DUCKS
	The role of familial relationships in survival and recruitment in the lesser snow goose	CTR \$	1,750	EC
	Co-investigator with Prepas, E E: Meanook Biological Research Station . . .			
	Problems in animal dispersal	OPR \$	39,500	NSERC
	Toxicology of peregrine falcons in the Keewatin district of the N.W.T	OPR \$	20,150	WWFC
Boutin, S A	Experimental tests of mammalian population regulation	OPR \$	30,400	NSERC
Chambers, P	Co-investigator with Prepas, E E: Water quality studies of Alberta . . .			
Chang, J P	Automated radioactive flow detection system for Gilson HPLC	EQP \$	42,180	NSERC
	High performance liquid chromatography (HPLC) system	EQP \$	39,054	NSERC
	Intracellular mechanisms mediating the actions of gonadotropin-releasing hormone and dopamine on gonadotropin secretion in goldfish	OPR \$	27,000	NSERC
Clifford, H F	Ecology of aquatic invertebrates	OPR \$	24,960	NSERC
Court, G S	Co-investigator with Boag, D A: Toxicology of peregrine falcons . . .			
Gallin, W J	Cellular mechanisms of development	OPR \$	200,087	AHFMR
	Co-investigator with Roy, K L (Microbiology): Applied biosystems model 381A-01 . . .			
Goldberg, J I	Embryonic and postembryonic development of the serotonin phenotype in <i>Helisoma</i>	OPR \$	81,495	AHFMR
	Embryonic and postembryonic development of the serotonin phenotype in <i>Helisoma</i>	OPR \$	24,000	NSERC
	Inverted photomicroscope with phase-contrast, epi-fluorescence and DIC capabilities	EQP \$	35,065	NSERC
Gorbman, A	Sexual development of hagfish	OPR \$	8,000	NSERC
Hannon, S J	Behavioral and population ecology of northern birds	OPR \$	26,900	NSERC
Hart, L	Co-investigator with Prepas, E E: Preparation of an atlas of Alberta . . .			
Holmes, J C	Investigations on communities of parasitic Helminths	OPR \$	29,500	NSERC
Kaufman, W R	Physiological and developmental studies on the salivary glands and on reproduction of ixodid ticks (Acari: Ixodidae)	OPR \$	27,000	NSERC
Lauber, J K	Photobiological effects on endocrine and growth parameters	OPR \$	25,000	NSERC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>
MacKay, W C				
	Co-investigator with Prepas, E E: An atlas of Alberta lakes . . .			
	Environmental physiology of fish	OPR	\$ 19,000	NSERC
	Co-investigator with Prepas, E E: Meanook Biological Research Station . . .			
	Co-investigator with Prepas, E E: Preparation of an atlas of Alberta . . .			
Mahrt, J L				
	Co-investigator with Zwickel, F C: Population ecology of vertebrates . . .			
Malhotra, S K				
	Immunocytochemical and structural characterization of new cell marker antigens in nervous tissue	OPR	\$ 30,000	NSERC
	Donations/gifts towards multiple sclerosis research	OPR	\$ 5,000	TN
	Publication of fluorescence chart	OPR	\$ 500	ZEISS
Murie, J O				
	Behavioral ecology, life history, and social behavior of Sciurid rodents	OPR	\$ 29,500	NSERC
Nelson, J S				
	Systematic and biogeographic studies of Trachinoid and Cottoid fishes, classification of fishes, and evolutionary studies of, primarily, Stickleback fishes	OPR	\$ 24,000	NSERC
Nursall, J R				
	Biology and sexual behavior in Ophioblennius atlanticus	OPR	\$ 15,000	NSERC
Palmer, A R				
	Shell form and evolution in Prosobranch gastropods: Genetic basis and adaptive value of intraspecific shell variation	OPR	\$ 46,500	NSERC
Peter, R E				
	Induced spawning (Alberta/China/Guelph)	CTR	\$ 58,100	IDRC
	Neuroendocrine and endocrine control mechanisms in Teleost fishes	OPR	\$ 72,732	NSERC
Prepas, E E				
	Control of algae in farm dugouts	OPR	\$ 16,500	ADA
	Fourth Annual Applied Aquatic Studies Workshop, Edmonton, Alberta, 23-24 February 1988	CFC	\$ 1,000	AE
	Water quality studies of Alberta lakes & rivers, Part I and II	OPR	\$ 20,000	AE
	An atlas of Alberta lakes	CTR	\$ 59,000	AE
	To write report explaining the chemical mechanism, ecological implications and long-term potential of lime treatments in lakes	CTR	\$ 3,000	AE
	Management of farm dugouts as water supplies: Use of lime for algae control	OPR	\$ 16,500	ARCA
	Lime and aluminum treatment of Alberta dugouts	CTR	\$ 4,000	EC
	Autoanalyzer for phosphorus, nitrogen and sulfate analysis	EQP	\$ 15,726	NSERC
	Prediction and manipulation of productivity in eutrophic lakes	OPR	\$ 27,500	NSERC
	Meanook Biological Research Station	INF	\$ 14,788	NSERC
	Preparation of an atlas of Alberta lakes	OPR	\$ 35,000	RPWF
Reimchen, T E				
	Niche segregation, sources of mortality and adaptation in Stickleback	OPR	\$ 19,200	NSERC
Ruth, R F				
	Radiation induced hypotension	CTR	\$ 110,000	DND
Samuel, W M				
	Impact of parasites on host populations with emphasis on moose/winter tick interactions	OPR	\$ 30,000	NSERC
Spencer, A N				
	Cellular basis of simple behaviours in invertebrates	OPR	\$ 37,964	NSERC
	Co-investigator with Goldberg, J I: Inverted photomicroscope with phase-contrast, . . .			
Stacey, N E				
	Hormonal, pheromonal, and central neurochemical aspects of sexual behavior in fish	OPR	\$ 36,352	NSERC
Steiner, A L				
	Behavioral and evolutionary biology of wasps, their insect prey and parasites	OPR	\$ 9,000	NSERC
Stirling, I G				
	Mortality patterns of subadult polar bears	OPR	\$ 27,400	NSERC
	Reproductive ecology of Atlantic walruses, <i>Odobenus rosmarus rosmarus</i> , in the central Canadian high Arctic	OPR	\$ 12,000	WWFC
Strobeck, C				
	Co-investigator with Roy, K L (Microbiology): Applied biosystems model 381A-01 . . .			
	Co-investigator with Dean (Agriculture and Forestry): Genetic variation and adaptation . . .			
	Co-investigator with Prepas, E E: Meanook Biological Research Station . . .			
	Molecular approaches to the study of evolutionary processes in natural populations	OPR	\$ 33,438	NSERC
Tonn, W M				
	Co-investigator with Prepas, E E: Meanook Biological Research Station . . .			
	Community ecology and population regulation of fishes in small boreal lakes	OPR	\$ 22,500	NSERC

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Wang, L C H					
	Calcium and cardiac function at low body temperature	OPR	\$ 37,000	CHF	
	Investigate mode and mechanism of theophylline - stimulated thermogenesis	CTR	\$ 68,116	DND	
	Improving cold tolerance by theophylline: Mode and cellular mechanisms of action	OPR	\$ 44,574	MRC	
	High performance liquid chromatograph system / electro-chemical detector	EQP	\$ 21,500	NSERC	
	Co-investigator with Pang, P K (Medicine, Physiology): Research and development of natural . . .				
	Co-investigator with Clandinin, M T (Home Economics, Foods and Nutrition): Demonstration of the in vivo significance . . .				
	Homeotherms in cold: Strategies and adaptations	OPR	\$ 47,316	NSERC	
	Co-investigator with Prepas, E E: Autoanalyer for phosphorus, nitrogen . . .				
	Co-investigator with Pang, P K (Medicine, Physiology): Herbal medicine program . . .				
Wilson, M V					
	Computerization of the vertebrate paleontology collection	OPR	\$ 3,000	AMUSA	
	Late Cretaceous and early Tertiary fishes of North America	OPR	\$ 22,080	NSERC	
Zalik, S E					
	Studies on the biology of cellular adhesions during embryogenesis	OPR	\$ 42,980	MRC	
	Studies on the cell surface during regeneration and development	OPR	\$ 40,000	NSERC	
Zwickel, F C					
	Population ecology of vertebrates	OPR	\$ 20,000	NSERC	
Type of Award		<i>No.</i>	<i>Amount</i>	Source of Funds	
Conferences	1	\$ 1,000	AHFMR	2	\$ 281,582
Contracts	7	\$ 303,966	MRC	2	\$ 87,554
Equipment	5	\$ 153,525	NSERC	37	\$ 1,067,555
Infrastructure	1	\$ 14,788	Other Provincial	7	\$ 151,000
Operating	46	\$ 1,435,428	Other Federal	5	\$ 241,966
Total	60	\$ 1,908,707	Other Agencies	7	\$ 79,050
			Total	60	\$ 1,908,707

Office of the President

Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Conferences	4	\$ 40,389	AHFMR	1	\$ 10,389
Total	4	\$ 40,389	MRC	1	\$ 10,000
			NSERC	1	\$ 10,000
			SSHRC	1	\$ 10,000
			Total	4	\$ 40,389

Office of the President

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Abu-Laban, B					
	National Conference on University Research and the Future of Canada, Edmonton, Alberta, April 26 to April 29, 1988	CFC	\$ 10,389	AHFMR	
	National Conference on University Research and the Future of Canada, Edmonton, Alberta, April 26 to April 29, 1988	CFC	\$ 10,000	MRC	
	National Conference on University Research and the Future of Canada, Edmonton, Alberta, April 26 to April 29, 1988	CFC	\$ 10,000	NSERC	
	National Conference on University Research and the Future of Canada, Edmonton, Alberta, April 26 to April 29, 1988	CFC	\$ 10,000	SSHRC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Conferences	4	\$ 40,389	AHFMR	1	\$ 10,389
			MRC	1	\$ 10,000
			NSERC	1	\$ 10,000
			SSHRC	1	\$ 10,000
			Total	4	\$ 40,389

VP Academic

Type of Award			No.	Amount	Source of Funds			No.	Amount
Contracts	1	\$		4,020	AHFMR	1	\$		54,200
Infrastructure	4	\$		96,700	SSHRC	4	\$		48,440
Operating	2	\$		13,940	Other Provincial	1	\$		4,020
Total	7	\$		114,660	Other Federal	1	\$		8,000
					Total	7	\$		114,660

Department of Computing Services

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Crawford, G	Computer networking study	CTR	\$ 4,020	AAEM	
Ewasechko, H	Co-investigator with Crawford, G: Computer networking study . . .				
Fedorick, D	Co-investigator with Crawford, G: Computer networking study . . .				
Humphrey, C K	An index to the Canadian national election studies	OPR	\$ 5,940	SSHRC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Contracts	1	\$ 4,020	SSHRC	1	\$ 5,940
Operating	1	\$ 5,940	Other Provincial	1	\$ 4,020
Total	2	\$ 9,960	Total	2	\$ 9,960

Library System

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Charles, J					
	British popular fiction, 1770-1830	INF \$	20,000	SSHRC	
	Hogarth Press Collection - for the Bruce Peel Special Collections Library	INF \$	10,000	SSHRC	
Freeman, P					
	Award to University of Alberta Medical Library - Library Support	INF \$	54,200	AHFMR	
Wikeley, J K					
	Romanticism collection	INF \$	12,500	SSHRC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Infrastructure	4	\$ 96,700	AHFMR	1	\$ 54,200
			SSHRC	3	\$ 42,500
			Total	4	\$ 96,700

University of Alberta Archives

Investigator	Project Title	Award	Amount	Agency
Parker, J M	William Rowan Papers	OPR	\$ 8,000	CCA
	Operating	Other Federal	1	\$ 8,000

VP Research

Type of Award	No.	Amount
Contracts	1	\$ 136,625
Operating	1	\$ 150,000
Total	2	\$ 286,625

Source of Funds	No.	Amount
Other Provincial	1	\$ 150,000
Other Federal	1	\$ 136,625
Total	2	\$ 286,625

VP Research

Investigator	Project Title	Award	Amount	Agency
Kaplan, J G				
	Strengthening office of technology transfer	OPR	\$ 150,000	ATRT
	Technology transfer	CTR	\$ 136,625	NRC

Type of Award	No.	Amount
Contracts	1	\$ 136,625
Operating	1	\$ 150,000
Total	2	\$ 286,625

Source of Funds	No.	Amount
Other Provincial	1	\$ 150,000
Other Federal	1	\$ 136,625
Total	2	\$ 286,625

Interdisciplinary Research Units

Type of Award	No.	Amount
Contracts	1	\$ 7,100
Operating	8	\$ 96,712
Total	9	\$ 103,812

Source of Funds	No.	Amount
NSERC	3	\$ 44,700
SSHRC	2	\$ 8,637
Other Provincial	1	\$ 25,000
Other Federal	2	\$ 19,523
Other Agencies	1	\$ 5,952
Total	9	\$ 103,812

Boreal Institute for Northern Studies

Investigator	Project Title	Award	Amount	Agency
Schweger, B F				
	A comparative study of historic arctic clothing in Scandinavia and Canada and the theoretical basis for analysis	OPR	\$ 4,637	SSHRC
Wein, R W				
	Vegetation management workshop	CTR	\$ 7,100	EC
	Ecological effects of severe (deep-burning) fires on forest soils	OPR	\$ 5,952	NATO

Type of Award	No.	Amount
Contracts	1	\$ 7,100
Operating	2	\$ 10,589
Total	3	\$ 17,689

Source of Funds	No.	Amount
SSHRC	1	\$ 4,637
Other Federal	1	\$ 7,100
Other Agencies	1	\$ 5,952
Total	3	\$ 17,689

Canadian Institute of Ukrainian Studies

Investigator	Project Title	Award	Amount	Agency
Krawchenko, B				
	Research and writing of Encyclopedia of Ukraine. Funding (\$85,067.96) is administered through the Encyclopedia Office at the University of Toronto	OPR		CFUS

Developmental Disabilities Center

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Sobsey, R J	A literature review: Sexual abuse of individuals with mental handicaps	OPR	\$ 12,423	HWC	
Varnhagen, C K	Logical relations & comprehension of expository prose	OPR	\$ 10,000	NSERC	
	Canada Research Fellowship - Development of a model of reading comprehension and instruction	OPR	\$ 4,000	SSHRC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Operating	3	\$ 26,423	NSERC	1	\$ 10,000
			SSHRC	1	\$ 4,000
			Other Federal	1	\$ 12,423
			Total	3	\$ 26,423

Devonian Botanic Garden

<i>Investigator</i>	<i>Project Title</i>	<i>Award</i>	<i>Amount</i>	<i>Agency</i>	
Currah, R					
	Cultural and taxonomic studies of ectomycorrhizal fungi associated with lodgepole pine and white spruce in Alberta	OPR	\$ 25,000	AFDRT	
	Taxonomy and ecology of fungi associated with 1) orchids, and 2) keratin	OPR	\$ 19,700	NSERC	
Sigler, L					
	Co-investigator with Currah, R: Cultural and taxonomic studies . . .				
	Taxonomy and ecology of microfungi	OPR	\$ 15,000	NSERC	
Type of Award	<i>No.</i>	<i>Amount</i>	Source of Funds	<i>No.</i>	<i>Amount</i>
Operating	3	\$ 59,700	NSERC	2	\$ 34,700
			Other Provincial	1	\$ 25,000
			Total	3	\$ 59,700

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